



# National Center for Conservation Science & Policy

*84 Fourth Street, Ashland, Oregon 97520*

Bureau of Land Management  
Western Oregon Plan Revisions Office  
333 SW 1st. Avenue Portland, OR 97204

January 11, 2008

**Re:** Comments on the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts.

Dear Madams and Sirs,

We are responding to your request for comments on the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts. We have review the Draft EIS and have serious concerns regarding the effects to native forests, particularly old-growth forests, oak woodlands and other important terrestrial habitats. We have reviewed relevant scientific literature and find the proposed changes to land management plans will negatively affect aquatic habitats and species. We are particularly concerned about the abandonment of the Northwest Forest Plan and find that the DEIS fails to consider the elimination of many important aspects of the plan including the Aquatic Conservation Strategy.

The DEIS analysis of the effects on biodiversity, Endangered Species Act listed species, special status species, big game, migratory birds, and survey and manage species is insufficient to inform the public and decision maker and provide for a reasoned comparison of the alternatives. Importantly, we are unable to reconcile the findings of the Northwest Forest Plan FSEIS, SAT, and FEMAT analyses and the various NEPA documents removing Survey and Manage and Annual Species Reviews conducted under the Survey and Manage Program with the conclusions in the WOPR DEIS analysis. The final EIS should incorporate and reconcile the conclusions of past analyses that have different results than the analyses presented in the WOPR. The final EIS should also consider information summarized in watershed analyses and LSR assessments.

The DEIS relies excessively on the draft northern spotted owl recovery plan and draft redesignation of critical habitat and the draft redesignation of marbled murrelet critical habitat. The spotted owl documents have been found deficient in multiple peer reviews and the redesaination of critical habitat appears flawed.

Due to the length of the document, the broad scale of the project area, the significance of the proposed changes to land management plans, and the number of resources affected by the changes we have been unable to prepare detailed comments on all subjects of interest to our organization. Issues that are of importance but not fully developed in our comments include: changes to ACEC designations, the impacts to northern spotted owls and marbled murrelets, and the effects on terrestrial habitats, soils, sedimentation, landslides, stream flow, invasive plants, the impacts of roads, and many of the species found on the BLM's special status lists.

We are concerned that the DEIS fails to consider the effects of the proposed activities on global carbon cycles and emerging threat posed by Sudden Oak Death. The DEIS fails to consider the effects of and relevant science relating to post-fire logging and other forms of "salvage" logging.

We commend the BLM for attempting to better manage off-highway vehicle use but find that the DEIS fails to consider the effects of proposed changes to OHV designations. We urge the BLM to consider a wider range of alternatives including alternatives that increase protection of endangered species, fish, and old-growth forests.

We are including a CD containing a number of scientific papers and other documents with our hard copy submission. If we can be of any assistance locating other references cited in our comments please contact me by email ([rich@nccsp.org](mailto:rich@nccsp.org)) or phone (541-482-4459 x307).

Sincerely,

Richard S. Nauman

## Purpose and Need

***The Purpose and Need unreasonably restricts the range of alternatives.*** By focusing on a narrow, unreasonable interpretation of the O&C Act, the BLM restricts the range of alternatives to actions that increase the extent and the impacts of timber harvest, road building, and other associated activities to old-growth forests, the Northern spotted owl, the marbled murrelet, ESA listed salmon and steelhead, other special status species, important recreational species including big game, fish, and birds. The EIS should provide a range of alternatives and consider the full legal history of the O&C act and consider the detailed history of the act presented in the attached article Scott and Brown (2007). The attached manuscript Staus (2007) provides an alternative created using an Ecosystem Management Support System that should be considered in the analysis.

***The DEIS Page 4 states in the Reason to Revise section that the failure to meet expected harvest levels is largely due to "...court decisions regarding the survey and manage mitigation measure and Aquatic Conservation Strategy."*** How did these court decisions affect timber harvest? Which court decisions is the DEIS referring to? This section should also discuss the role of budget limitations and the BLMs failure to comply with provisions of Survey and Manage and the ACS that lead to the failure to meet the predicted harvest levels.

## Alternatives

***The No Action Alternative includes Survey and Manage as of the 2001 ROD. Does it also include the results of the annual species reviews?***

***The DEIS fails to describe the No Action Alternative.*** In chapter 2, DEIS Page 65 if refers the reader to the individual 1995 RMPs for the 5 BLM Districts and Klamath Falls RA. The EIS must describe the No Action Alternative in sufficient detail for the reader to make comparisons to the action alternatives and assess the validity of the environmental effects section.

***The No Action Alternative should be the current RMPs as implemented and funded.*** The DEIS states that a 17% budget increase would be necessary to implement the No Action Alternative (DEIS Page 549).

***Statements in the DEIS regarding changes to ASQ and the extent of riparian reserves conflict with the 2004 Survey and Manage SEIS, 2007 Survey and Manage ROD, and internally within the DEIS.*** The DEIS (Page 566) states that the No Action alternative ASQ is 32% higher than under the 1995 RMPs because, in part, the Riparian Reserves are actually much smaller (~30% smaller) than estimated in 1995. The DEIS Page 482 states that riparian reserve areas were adjusted downward for the No Action Alternative to 15% of the landscape. These statements contradict numerous statements in the 2004 Survey and Manage SEIS and the July 2007 BLM ROD for the S&M SEIS that state that Riparian Reserves were larger than estimated in 1995 and that the take up roughly 50% of the landscape. For example:

“...reanalysis has show a 10% increase in Riparan reserves...”  
2004 Survey and Manage SEIS Page 105

“On average, 40 to 50 percent of any watershed is reserved by the application of Riparian Reserves...”  
2004 Survey and Manage SEIS Page 107

“The analysis in the Northwest Forest Plan Final SEIS underestimated the potential landscape level of protection provided by the Aquatic Conservation Strategy. The quantity of Riparian Reserve acres is higher than originally analyzed...”  
2004 Survey and Manage SEIS Page 132

“Estimates from FEMAT on the percent of the land base within Riparian Reserves averaged 40 percent (USDA, USDI 1994b:B-12). Estimation done on individual administrative units has found that these initial estimates were conservative and, in most cases, Riparian Reserves are more extensive than originally estimated.”  
2004 Survey and Manage SEIS Page 135

“Subsequent Watershed Analyses and project planning experience by the Agencies’ administrative units has shown that estimate to be 20 to 30 percent too low west of the Cascade crest where dense vegetation apparently kept photo-interpreters from seeing and mapping all intermittent streams, wet areas, and unstable soils.”  
2004 Survey and Manage SEIS Page 136

“...resulted in a 15 percent decrease in PSQ “based primarily on increases...in Riparian Reserves”...”  
2004 Survey and Manage SEIS Page 136

“Other west-side units also report actual Riparian Reserve acres to be considerably higher than estimated in the documentation of the FEMAT sampling (Johnson et al. 2003).”  
2004 Survey and Manage SEIS Page 136

“PSQ has been adjusted downward by approximately 15 percent primarily to more accurately reflect the extent of Riparian Reserves.”  
2004 Survey and Manage SEIS Page 139

“On average, about 50 percent of the federally managed area is in Riparian Reserves (Final Supplement:136).”  
2007 S&M BLM ROD Page 19

“...it is important to note that there is no map layer for Riparian Reserves...”

While DEIS Page 482 states that 15% of the BLM lands within the planning area are currently classified as Riparian Reserve under the No Action alternative and that 22% were estimated to be riparian reserve in 1995. This conflicts with the text on Page 719 and Table 207 Page 719 that report that 37% of BLM lands in the planning area are riparian reserve under the No Action Alternative and Figure 1 on Page XLVIII reports 14%.

The EIS should reconcile these discrepancies. Specific documentation in the methods used to map riparian reserves should be included in the EIS. Sections of the analysis and conclusions in the wildlife section and other sections affected by this discrepancy should be reconsidered and the environmental effects of the proposed action with the correct value for riparian reserves should be discussed.

***The EIS should discuss the differences between the LSRs under the No Action Alternative and the LSMAs under Alternative #1.*** From the GIS layers available on the WOPR webpage it appears that alternative #1 eliminates the 100 acre LSRs associated with Northern Spotted Owl Activity centers. Is this true? What are the effects of this change? Are the LSRs and Alternative #1 LSMAs otherwise the same? What are the effects of any other changes to the distribution of LSRs?

***Which areas currently do not meet the Alternative #3 50% rule and where are they?***

***The DEIS uses the term “generally” in several places to describe actions under alternative #3. The EIS should be specific or describe when deviations from these standards will occur, how this affects the analysis, and any assumptions used in the analysis of this alternative.*** Specific examples include the length of rotations and “generally” no regeneration harvest south of Grants Pass in the Medford District and in the Klamath Falls Resource Area.

***The EIS should analyze all resources for all alternatives including the subalternatives.*** The Council on Environmental Quality’s document *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations* states:

“The degree of analysis devoted to each alternative in the EIS is to be substantially similar to that devoted to the “proposed action.” Section 1502.14 is titled “Alternatives including the proposed action” to reflect such comparable treatment. Section 1502.14(b) specifically requires “substantial treatment” in the EIS of each alternative including the proposed action.”

In particular, these subalternatives likely have significantly different effects on wildlife, riparian resources, water quality, and aquatic species.

***The analysis unreasonably constrains alternative #1 subalternative #3 and fails to consider the potential for ecologically appropriate thinning to provide for a predictable***

**supply of timber.** The analysis is unreasonable because rather than calculating and disclosing potential volume directly, it limits the analysis and disclosure to estimating the number of years that harvest near the level of alternative #1 could be sustained with thinning volume. The EIS must thoroughly explore the option of producing timber from thinning in plantations and in stands with significant deviation from natural conditions due to fire suppression. According to the Settlement Agreement that led to the WOPR DEIS:

“The agencies estimate that with appropriate funding, thinning sales in the LSRs could produce approximately 4-6 billion board feet of timber over 20 to 30 years, after a start-up period.”

See also DellaSala et al (2005) attached for a conservative estimate of thinning volume.

By failing to fully analyze this subalternative for its effects on recreation, water quantity and quality, soils, invasive plants, fish, wildlife, and other resources the DEIS fails to disclose the significant benefits of this approach and the significant impacts of the preferred alternative. In particular, this subalternative could provide for stable communities and a predictable level of production.

***DEIS Page XLVII – missing “acres” from statement that 6 to 9 green trees retained depending on vegetation series.***

## **Alternatives Not Considered**

Alternatives not considered include:

- Use historic variability, retention of all mature and old-growth stands, and small tree harvesting.
- Protect all forests that are over 80 years of age.
- Two-phased management approach that recovers threatened and endangered species first then harvesting timber.
- No Old-growth harvesting

***The DEIS (Pages 104-109) states that these alternatives were not considered because they fail to meet the stated Purpose and Need of complying with the BLMs interpretation of the O&C Act. It is unreasonable to exclude these alternatives and the EIS should fully explore them.*** The Council on Environmental Quality’s document *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations* states:

“An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable...”

and

“Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies.”

***The EIS should also consider the effects of transferring management of BLM's forested land to the US Forest Service, an alternative that was eliminated from consideration because it would require an act of congress.*** NEPA requires the analysis of reasonable alternatives even if they are outside the jurisdiction of the lead agency. See the quote in the previous comment from the The Council on Environmental Quality's document *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*. This alternative fits the purpose and need to increase timber harvest. Several National Forests in the Pacific Northwest have had much greater success in preparing controversy free timber sales even though they are under more restrictive regulations than the BLM (e.g. NFMA) and in general have been provided with much more limited staffs and budgets.

***The EIS should consider a full range of alternatives that includes alternatives with greater levels of protection for fish, wildlife, and old forests than the No action alternative.*** The EIS should consider a full range of alternatives that present a range of effects so that the public and decision maker can fully understand the trade-offs and impacts of the proposed actions.

## **Environmentally Preferred Alternative**

***We recommend that the BLM select the No Action or an alternative with greater protection of old forests, streams, fish, and wildlife as the Environmentally Preferred Alternative.***

## **Elimination of the Northwest Forest Plan**

***The DEIS fails to consider the impacts of the elimination of the Northwest Forest Plan Standards and Guidelines.*** In addition to land allocations, the Northwest provides a wide variety of Standards and Guidelines that protect resources and comply with federal laws. The DEIS fails to consider and disclose the effects of the elimination of all aspects of the Northwest Forest Plan. The EIS should consider and disclose the direct, indirect, and cumulative impacts of the elimination of the Northwest Forest Plan on resources on BLM lands, other federal lands including USFS lands, state, and other non-federal lands including privately owned lands. Specific examples of provisions eliminated by the WOPR action alternatives include but are not limited to:

- Coordinated management of USFS and BLM lands
- Regional Ecosystem oversight of activities in LSRs
- LSR assessments
- The watershed analysis process
- Coordinated terrestrial, riparian and watershed monitoring
- Managed Late-Successional Areas

- Adaptive Management Areas
- Riparian Reserves in unstable and potentially unstable areas
- Key watersheds and other aspects of the Aquatic Conservation Strategy
- Matrix Standards and Guidelines

***The EIS should consider and disclose the direct, indirect, and cumulative effects of the WOPR Action Alternatives, particularly the elimination of the Northwest Forest Plan, on US Forest Service programs.*** The US Fish and Wildlife Service’s Biological Opinion for Option 9 (the Northwest Forest Plan) specifically states in the assumptions section “Alternative 9 applies to Forest Service and BLM lands; all future actions on these lands would be consistent with Alternative 9...” How will BLMs withdrawal from the Northwest Forest Plan affect the USFS?

The settlement agreement with AFRC that lead to the WOPR acknowledges the integrated nature of USFS and BLM management under the Northwest Forest Plan:

“Although neither the Secretary of Agriculture nor the Forest Service are defendants in the AFRC O & C case, or were defendants in the Counties O & C case, they are undertaking the obligations herein in the recognition that the NWFP is an integrated plan for management of BLM and Forest Service lands within the range of the Northern Spotted Owl, and that were AFRC to succeed in their O & C Act claims, or were the Counties to succeed in a new action raising a similar challenge to the management of O & C lands, a larger burden would fall on the Forest Service to meet the ecological objectives of the NWFP.”

How will the WOPR action alternatives affect USFS budgets, timber sales, revenues to counties, and jobs in the region? The potential effects of the BLM’s withdrawal from the Northwest Forest Plan may extend outside of Oregon and impact activities on USFS and non-federal lands throughout the range of the Northern spotted owl.

***How will BLM’s withdrawal from the Northwest Forest Plan affect Habitat Conservation Plans and other related plans including plans affecting species management on private land, state forests and other non-federal lands?***

***How will BLM’s withdrawal from the Northwest Forest Plan affect the Oregon Plan for Salmon and Steelhead and other conservation plans and programs that protect species and water quality?***

***How will BLM’s withdrawal from the Northwest Forest Plan affect Water Quality Management Plans, TMDL documents, and other Clean Water Act documents that assume implementation of or are based on the Aquatic Conservation Strategy of the Northwest Forest Plan?***

***Because the action alternatives do not include continued implementation of Survey and Manage the EIS must analyze the effects of the elimination of this provision of the***



***Northwest Forest Plan.*** Simply stating that the effects of this provisions removal on these species are the same as the effects of the alternatives on the northern spotted owl is not sufficient. The Survey and Manage standards and guidelines were included in the Northwest Forest Plan because the effects of the proposed actions were not the same as for northern spotted owls and that the plan's provisions for spotted owl conservation were not sufficient to protect these species.

***The WOPR DEIS fails to consider information presented in numerous watershed analyses that have been written as part of the implementation of the Northwest Forest Plan.*** This information provides an assessment of current conditions and is useful for understanding cumulative impacts.

***The WOPR DEIS fails to analyze the elimination of Northwest Forest Plan mandated watershed analyses.***

## **Methods**

***The DEIS analysis uses a deterministic approach to modeling forest habitats that does not consider stochastic processes important to the development and distribution of habitats across the landscape including fire, wind, and insects.*** The forest development modeling that underlies most the analyses in the WOPR DEIS overestimates future habitat for old-forest associated species like the northern spotted owl and marbled murrelet. Given the frequency of wind disturbance in coastal areas and fire especially in Southern Oregon, these factors should be incorporated into the analysis.

***The DEIS analysis relies on proprietary software (OPTIONS). Documentation and the software are not readily available to the public. Proprietary data that are unavailable to the public for review may not be incorporated by reference in NEPA documents (40CFR 1502.21).*** The EIS should choose a modeling system and method that is well documented, available, transparent, and has been subject to peer review and publication in peer-reviewed journals.

An example of a successful program that was developed by federal agencies, is available to the public, incorporates fire, wind and other stochastic disturbance, and would provide a suitable, tested, and documented alternative to the OPTIONS model is Landis-II. We recommend that the BLM consider using this model for the WOPR EIS analysis. For more information see:

Scheller RM, Domingo JB, Sturtevant BR, Williams JS, Rudy A, Gustafson EJ, Mladenoff DJ. 2007. Design, development, and application of LANDIS-II, a spatial landscape simulation model with flexible temporal and spatial resolution. Ecological modelling 201:409–419.

and the web site: <http://www.landis-ii.org/>

***Extensive scientific literature, much of it produced by federal agency personnel, regarding fire and disturbance modeling is available and should be considered. Relevant publications regarding the modeling of fire and landscape dynamics and processes include:***

Keane RE, Parsons R, Hessburg P. 2002. Estimating historical range and variation of landscape patch dynamics: limitations of the simulation approach. *Ecological Modeling* 151:29-49.

Keane RE, Cary GJ, Parsons R. 2003. Using simulation to map fire regimes: an evaluation of approaches, strategies, and limitations. *International Journal of Wildland Fire* 12:309-322.

Keane RE, Holsinger L, Pratt S. 2006. Simulating historical landscape dynamics using the landscape fire succession model LANDSUM version 4.0. USDA Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory. RMRS-GTR-171CD.

Pratt SD, Holsinger L, Keane RE. 2005. Modeling historical reference conditions for vegetation and fire regimes using simulation modeling. Chapter 10 in: *The LANDFIRE Prototype Project: nationally consistent and locally relevant geospatial data and tools for wildland fire management*. M.G. Rollins, Technical Editor. USDA Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory.

***The EIS should include a discussion of the reliability of the modeling processes used and any peer review, validation, and sensitivity testing conducted on the models and data used.*** Scheller et al (2007) summarize the scientific process for testing and validating a model and building an estimate of the confidence intervals associated with model outputs:

“Scientific rigor within a simulation model is enforced through the process of peer-review, during which the model must meet certain requirements including conceptual validity, model verification, validation with empirical data, and testing with sensitivity analysis (Aber, 1997; Aber et al., 2003). Following peer-review of the model, users can focus on model output as it pertains to the question at hand.”

Without peer review, verification, validation, and sensitivity analysis the public and decision maker are unable to judge the reliability, accuracy, and precision of the model results.

## ***Aquatics Modeling***

***The methods used in the fish analysis fail to consider the current distribution and health of fish populations and the current condition of aquatic habitats.***

## **Intrinsic Potential**

Nearly all the text on pages H-1082-1083 and Figure 301 on page H-1083 are taken directly from a publication in the journal Ecological Applications (Burnett et al. 2007). Because this passage was taken from another publication, the references to Morrison et al. (1998) and Vadas and Orth (2001) do not appear in the references section of the WOPR DEIS. A citation for “Burnett et al, *in press*” appears at the end of the section but traditionally, citations are used for supporting reference and not for long multi-page quotes. Quotation marks and appropriate references should be used to indicate previously published work. In this section, it is impossible for the reader to identify what work was conducted by the CLAMS project and what was done by the BLM DEIS team. Did the CLAMS team or BLM expand the model to chinook salmon juveniles? Where can we find information regarding the chinook model?

**Scope and Limitations** - In the Burnett et al (2007) publication the authors include a section titled “*Scope and Limitations*”. Because the calculation of intrinsic potential underlies the analysis of effects on fish, the EIS should discuss both the advantages and limitations of using this method including but not limited to the two following statements:

“Intrinsic potential models may be limited by incorporating landform controls but not other abiotic or biotic factors. These can affect the suitability of freshwater habitat for salmonids, and *thus the accuracy of our landscape characterizations.*” Burnett et al 2007 Page 76 emphasis added.

“The approach taken in this study is most reliably applied and interpreted at broader spatial scales. The resolution and accuracy of spatial data undoubtedly reduced the accuracy of sub-province- and province scale characterizations.” Burnett et al 2007 Page 76.

The DEIS Page H-1091 states that the fish productivity index, calculated using the intrinsic potential value, “...is used to assess potential fish habitat within a basin.” How does this difference in scale affect the interpretation of the results of the fish analysis?

## **Wood Model**

***The EIS must disclose the details of the methods used in sufficient detail to allow the reader to understand the assumptions, limitations, inputs, processes, and outputs of the models.*** Appendix H in the DEIS provides information on the wood models. This discussion is difficult to follow and the description of the model is insufficient to replicate the process used. We provide specific questions and comments below but find it difficult to adequately assess these models without further information.

***To clarify the results of the wood modeling and the relative importance of each process, we request that the results of each of the three wood models be presented individually in addition to the total result.***

***Appendix H does not refer to the figures in the text making it difficult to associate what parts of the models are being illustrated with the figures.***

***The DEIS fails to provide sufficient detail or reference to the scientific literature to allow the reader to adequately assess the relevance and limitations of the models.*** In particular, while the DEIS provides some documentation in Appendix H it fails to disclose the methods used in a specific enough manner to recreate the process used or to compare the method to other methods or reconcile the results with published empirical data.

***The development and application of scientific models is a multi-step task that includes model development, peer review, empirical validation testing, and sensitivity analysis.*** Scheller et al 2007 summarize the basic process and emphasize the importance of peer review and model validity testing:

“Scientific rigor within a simulation model is enforced through the process of peer-review, during which the model must meet certain requirements including conceptual validity, model verification, validation with empirical data, and testing with sensitivity analysis (Aber, 1997; Aber et al., 2003). Following peer-review of the model, users can focus on model output as it pertains to the question at hand.

Because the three wood recruitment models were developed for this analysis (DEIS Page H-1084) the EIS should disclose all peer review, validation, and sensitivity analysis conducted. The wood models provide the foundation for the fish analysis and therefore the EIS should provide information regarding the scientific confidence in the model results, the statistical confidence in the inputs and the sensitivity of the model to the uncertainty of the inputs. Because the wood models use data from the OPTIONS and growth and yield models the EIS should disclose all peer review, validation, and sensitivity analysis conducted for these models. Because even small errors can accumulate and affect the outcome of this type of multi-step modeling effort, understanding the model’s sensitivity to changes in input values and violations of assumptions is critical to assign the magnitude and reliability of predicted outcomes.

***In a recent review of wood and sediment transport in headwater streams, May (2007) states: “At the present time there is limited ability to infer patterns and processes of wood delivery to streams from terrain-based mapping.”*** The EIS should disclose the limitations of the methods used and the level of certainty in the science behind the analysis.

***DEIS Page H-1084 states “A simplified set of stand types were used...” What is the source of these stand types and how were they simplified?***

***We disagree with the statement that “...Stand Establishment and Young stand types have few or no large trees, so excluding these stand types did not affect the overall***

***spatial and temporal patterns predicted by the models.” (DEIS Page H-1084).*** Stand Establishment and Young stands often provide massive inputs of large wood to streams. In the absence of logging, early successional stands developing from natural disturbance, typically wind or fire in Western Oregon, retain significant numbers of standing green trees, snags, and down wood. Given the limited (or no) retention of snags and down wood coupled with provisions for post-fire logging under the WOPR action alternatives young managed stands will provide little to no wood input to streams. Given the standards and guidelines of the Northwest Forest Plan this assumption is likely not valid in many areas for the no action alternative. The implications of making this assumption and the consequences for all alternatives should be examined and disclosed in the EIS.

***Given the variability in the distribution of tree species, differences in growth rate between species, differences within species between sites, and the average and maximum size of trees given site specific differences in growing conditions, disturbance patterns, and genetic variation in life-history traits why was “a single average tree height used” (DEIS Page H-1084)?*** The EIS should disclose all relevant factors used in the analysis including the value of tree height used in this model. Given the modeling method used, the selection of this height directly affects the predicted effects of the narrow stream buffers proposed under the WOPR action alternatives on wood recruitment.

Figure 302 appears to indicate that 40 meters was used for the tree height input into the wood models. Figure 102 on DEIS Page 370 indicates that the minimum range of site potential trees in the East Cascades is 118 feet or 36 meters. The maximum potential tree height in figure 102 is 225 feet or 69 meters. Coastal Douglas Fir and other species are known to grow much taller than 225 feet in Coastal Oregon. For example, the Brummit Fir in Coos County Oregon is 326 feet (99 meters) tall.

McDade et al. (1990) found that “Stands with taller trees (old-growth conifers) contributed coarse woody debris to streams from greater distances than did stands with shorter (mature) trees.” By selecting an unreasonably low tree height as an input, the model will underestimate the impacts of narrow riparian buffers on wood recruitment to streams.

***Wood plays many important roles in creating and maintaining stream habitat in non-fish-bearing streams.*** The DEIS analysis unreasonably restricts the wood models to streams with fish or areas that can deliver wood to streams with fish. Wood plays an important role in sediment, gravel, and nutrient transport and storage. It can affect bank erosion and down cutting influencing channel development and fluvial processes. In small streams, large pieces of wood can provide a significant source of shade and helps maintain cool water temperatures through several mechanisms. Wood provides habitat for amphibians and other species and provides numerous other functions in stream environments that have both local and downstream impacts.

***The wood models should consider the full extent of debris flow and landslide prone areas that may deliver wood to all streams.***

## **Riparian Tree Fall Model**

The section beginning at the top of DEIS Page H-1085 and continuing through Page H-1088 while titled “Methods” appears to refer to the Riparian Tree Fall Model. This section lacks sufficient detail for us to adequately review the methods used. Based on the limited information available we have the following questions and comments but are unable to completely review the appropriateness of the methods used or assess the validity the outputs and conclusions drawn from them because we lack the most basic information regarding the methodology.

***What mortality causes does OPTIONS consider when determining mortality rate?***

***Was wind throw of single or groups of trees considered?***

***How were the stream fish distribution and the ground transportation road network GIS layers developed? What quality control checks if any have been done on it? What GIS data were used to represent streams? Were stream layers single line or double line?***

***DEIS Page H-1084 states that the model estimates “average annual wood inputs”. What units are the wood model outputs in?***

***The caption for Figure 302 (DEIS Page H-1085) appears to indicate that wood inputs were constrained to one tree height. The scientific literature (McDade et al 1990) reports that wood from greater distances including falling trees that knock down other trees contribute wood to streams. Was slope or horizontal distance used in this and the other wood models? Was the valley floor extent in the channel migration model incorporated into this distance?***

***How was the active channel width displayed in Figure 302 and Figure 303 determined? What role does it play in determining wood inputs to streams?***

***At the bottom of DEIS Page H-1085 the document says “For each stream-edge segment, the probability that a tree at the Digital Elevation Model point hits the segment when it falls was determined.” How is stream edge defined? What is a stream-edge segment? Are they part of the stream fish distribution GIS layer? How was the probability of a tree hitting the stream-edge segment calculated? Please provide the mathematical function or procedure used to calculate this probability. The caption of figure 303 (DEIS Page H-1086) says “Determining tree fall using DEMs.” Figure 303 is not referred to in the text and its relationship with the discussion is unclear. Is this part of the calculation of the tree-fall-hitting-stream probability? What is subtended by the angle in the figure?***

***Four inputs are listed for the tree-fall-hitting-stream probability calculation at the bottom of DEIS Page H-1085 but no mention of the method used is made. A discussion of the method would likely bring clarity to the meaning of the four inputs but without it we have the following questions:***

- How was fall direction calculated? The bullet has “closest edge segment” in parenthesis. Is fall direct assumed to be towards the closest point on a stream? Figure 303 appears to indicate that this direction is the “Most likely fall direction”. Is this true?
- What is meant by “angle subtended”? How is it used in the calculation?
- What role does distance to stream edge play in the calculation?
- How was slope at the DEM point calculated? At what scale was it calculated? What role does slope play in the probability calculation?

***Figure 304, while not referenced in the text, appears to present the results of the tree-fall-hitting-stream probability.*** It appears from this graph that only two probability functions, one for steep and one for flat slopes, were calculated. Were these two functions used to determine the tree-fall-hitting-stream probability? Were these relationships developed for each DEM point? The Y-axis is labeled “probability density”. Is this the likelihood that a falling tree from a given point will hit the stream? If so it seems that the values are low with a maximum of 1% (= 0.01 on axis label).

***The top 1/2 of DEIS Page H-1087 repeats a block of text and the bullet after the repeated block repeats information from the bottom of DEIS Page H-1087.***

***The last paragraph on DEIS Page H-1087 is confusing and difficult to follow:***

“With this information, for each corner of the pixel, the probability that a tree falls and that it hits a stream-edge segment is calculated. This probability is integrated over the area of the pixel to calculate the annual probability that a tree within the pixel falls and hits a stream-edge segment and is repeated for every segment potentially hit by a falling tree from within the pixel.”

This paragraph is confusing. It appears to indicate that the information immediately above it (variables from the stand table) was used to calculate the probability of a tree falling and hitting a stream edge segment. This would disagree with the previous page that indicated that fall direction, angle subtended, distance to stream edge, and slope were used to calculate this value. How was the probability from the four points “integrated”? Please show the formula and a sample calculation of how this calculation is made.

***The riparian tree fall model appears to assume that trees that don’t fall directly in a stream don’t contribute to large wood. What about trees that later move and trees that knock down other trees?***

### **Channel Migration**

***The caption of Figure 306 (DEIS Page H-1089) provides the only indication of how valley floor extent is determined. The description is general. Specific detail is necessary for the reader to assess the validity and implications of assumptions in the model.*** Specifically, the caption says “...within a specified elevation of the channel; within a

specified slope relative to the channel slope...” What is the value of the specified elevation? How is the “specified slope” calculated and what is its relationship to the channel slope? Please reference any scientific literature that supports these determinations.

***How was the 100 year floodplain occupation probability calculated or estimated?*** Is there scientific literature that supports this rate? Does OPTIONS use this rate in the growth calculations? If so, what affect does resetting succession every 100 years have on wood recruitment and stand development? Is this information incorporated into the riparian tree fall model?

#### **Debris Flow**

***Are areas classified as unstable or potentially unstable in the TPCC used in this model?***

***The graph in Figure 86 appears to contradict the text that refers to it:***

“Headwater streams differ in susceptibility to debris flows. See Figure 86 (*Probability of debris flow from intermittent streams*) for an illustration of intermittent channels that are more likely to deliver large wood to fish-bearing stream channels.”

and

“Analysis from the Coastal Landscape Analysis and Modeling Study indicates that a small portion of the headwater stream network is important in producing landslides and debris flows that can provide large wood to streams (Miller and Burnett, in press).” DEIS Page 345

The graph shows that almost all streams have a high probability of debris flow. Interpolating from the graph 75% of streams have a >97% probability and nearly 100% of streams have a >60% probability. Where did this graph come from? How was this relationship established?

***At the beginning of the wood modeling section (DEIS Page H-1084) the DEIS states that the wood recruitment models were “...developed for this analysis...”. However the beginning of this section appears to indicate that the method published in Miller and Burnett 2007 was used.*** Was the model published in Miller and Burnett 2007 used to model wood delivery by debris flow or was a similar or modified model used? If it was modified or similar to the Miller and Burnett model how were inputs, model assumptions, and outputs different?

***There is no listing in the reference section for “Miller and Burnett, in review” does this reference refer to the Miller and Burnett publication in the March 2007 issue of Water Resources research?*** If this work is remains unpublished and unavailable the DEIS must disclose the methods used for the debris flow modeling.



***The DEIS Page H-1089 states: “Each conditional probability that each Digital Elevation Model pixel was traversed by a debris flow was determined.” How was this probability calculated?***

***The statement “All relative probabilities were multiplies to give a specified mean recurrence interval for all 3rd and higher-order channels (350 years).” (DEIS Page H-1089) is difficult to understand. Please explain and be specific.*** What relative probabilities? What are they relative to? Are the relative probabilities the same as the conditional probabilities mentioned in the preceding sentence? Why was a mean recurrence interval specified for all 3<sup>rd</sup> and higher order channels? What about lower order channels? Why was 350 years chosen? What affect does this have on the results?

***Are land slides from slopes surrounding streams modeled? How does wood that is transported down stream bottoms in debris torrents get to the stream in the first place?***

***Were road crossings considered barriers to wood movement? What is the effect of making this assumption? Road crossings of streams are frequent initiation points of debris flows.***

***The EIS should provide a reference for the Oregon Department of Forestry data used to calculate mean debris flow track width.*** If the information is unpublished please provide the details of how the data was collected and any assumptions and limitations of the methods used to collect, summarize, and analyze it. What is the value of the mean debris flow track width that was used? Is it appropriate to use a single mean value for all streams and regions in the WOPR analysis?

***How are the debris-flow source pixels determined?*** Is only the 10-meter DEM used?

***What is the method used to calculate the potential wood accumulation along each pixel of the debris flow track?***

***How is the probability of debris-flow deposition calculated?***

***How is the relative down slope decrease in debris-flow traversal probability calculated?***

***What is meant by “calculated as per riparian” in the “Sources for debris flow wood” bullet list on DEIS Page H-1090.***

***How is wood deposited by previous debris flows initiated? Does the original value start at zero?***

***The logic of the passage on DEIS Page H-1090 is difficult to follow:***

“The amount of deposited wood that gets picked up by the next debris flow is determined by the probability that the wood is still in the channel when the next debris flow comes along ( $1 - (1 - \text{PDF})^R$ ); where PDF is

annual probability of debris flow traversal and  $R$  is  $(1/PDF)$ , the recurrence interval. This is equal to  $\sim 0.63$  for all values of PDF.”

What is equal to 0.63? The EIS should clarify this calculation.

***The passage that follows is also unclear:***

“The assumption is that only buried wood survives (surface wood decays) and that 30% of the wood is buried. That gives  $\sim 20\%$  of previously deposited wood available for future debris flow scour. This amount was multiplied by the probability of scour to estimate the amount of previously deposited wood picked up by debris flows.”

***Is there empirical support for the assumption that only buried wood survives? What is the rate of decay of large wood in streams?*** If 30% of the wood does not decay, why is only 20% (and not 30%) available for future events? How was the probability of scour estimated? How is the amount of deposited wood calculated?

***Miller and Burnett (2007) found that when measured over large scales (hundreds of square kilometers) that older forests “...always exhibited the lowest densities [of landslides], averaging 30% of that in recently harvested areas and 79% of that in younger, managed forests.”*** The authors (Miller and Burnett 2007) also state, “Debris flows through recently harvested forests tend to travel further, and entrain more material, than those through older stands containing large trees (Robison et al., 1999; May, 2002; Ishikawa et al., 2003; Lancaster et al., 2003).” The direct, indirect, and cumulative effects of timber harvest and road building on debris flows and landslides should be included in the models and the DEIS analysis.

***The EIS should use the Debris flow model to assess threats to human safety, structures, public roads, and developed areas and estimate the economic costs of increases in landslides and debris flows caused by activities proposed in the DEIS.***

### **Wood Modeling Conclusions**

While insufficient detail is presented to allow complete review of the methods used we offer the following comments:

***What is the relationship of the three models - are they summed? What are the final units of output? The DEIS refers to the output as “average annual wood input to stream” what units are these results expressed in?***

***What happens to wood when it enters a stream under these models? Is down stream movement by means other than debris flow considered?***

***The models do not appear to incorporate tree species or successional processes. Climax species such as western red cedar are successional to Douglas fir and are rot resistant making them long-lived in streams. The relatively short rotations proposed in the***

***WOPR alternatives will favor Douglas fir over late successional tree species. How will this affect wood recruitment rates and the size and quality of woody material in streams?***

***Why wasn't one of the published, peer reviewed large wood models used?***

***DEIS Page 726 states: "In the short term (within the next 10 years), the differences in effects between the alternatives are no greater than in the long term." These data are not disclosed in the DEIS.*** Given the importance of large wood to fish and stream function, the currently degraded condition of streams, and the critical state of many fish populations in the analysis area these short-term data are particularly relevant.

***DEIS Page 343 states: "The amount of large wood in stream channels is dependant on the amount of trees available on the landscape that can be delivered to a stream channel."*** The amount of wood in streams is dependent on a number of factors that include the number of trees in source areas. Other factors controlling the amount of wood in streams include processes that deliver wood and the rate that they deliver it and processes that remove wood from streams including downstream transport, decay, and movement to flood plains during high water events.

***The Wood analysis should incorporate the findings of the following papers:***

Benda L, Hassan M, Church M, May C. 2005. Geomorphology of steepland headwaters: The transitions from hillslopes to channels. Journal of the American Water Resources Association, Special Issue on Headwater Streams 41:835-851.

Faustini JM, Jones JA. 2003. Influence of Large Woody Debris on Channel Morphology and Dynamics on Steep, Boulder-Rich Mountain Streams, Western Cascade, Oregon. Geomorphology 51:187-206.

Hassan MA, Hogan DL, Bird SA, May CL, Gomi T, Campbell D. 2005 Spatial and Temporal Dynamics of Wood in Headwater Streams of the Pacific Northwest. Journal of the American Water Resources Association 41:899-919.

McClure JM, Kolka RK, White A. 2004. Effect of forest harvesting best management practices on coarse woody debris distribution in stream and riparian zones in three Appalachian watersheds. Water, Air, & Soil Pollution: Focus 4:245-261.

Nakamura F, Swanson FJ. 1994. Distribution of Coarse Woody Debris in a Mountain Stream, Western Cascade Range, Oregon. Canadian Journal of Forest Research 24:2395-2403.

Wing MG, Skaugset A. 2002. Relationships of Channel Characteristics, Land Ownership, and Land Use Patterns of Large Woody Debris in Western Oregon Streams. Canadian Journal of Fisheries and Aquatic Science 59:796-807.

Wood-Smith RD, Buffington JM. 1996. Multivariate geomorphic analysis of forest streams: Implications for assessment of land use impacts on channel condition. *Earth Surface Processes and Landforms* 21:277-393.

## **Fish Productivity Index**

***The DEIS Page 351 states “This analysis uses the mean annual large wood contribution to determine fish productivity using a population model developed for coho salmon by Lawson et al (2004).” In the Appendix H section on the fish productivity model, the DEIS (Page H-1091) states that “A similar approach was used by Lawson et al. (Lawson et al. 2004)...” It is unclear from these statements what method was used.***

***While the basic method used by Lawson et al (2004) appears to be generally sound we are concerned that it lacks peer review and testing.*** The Lawson et al (2004) document is a draft document and the model appears in appendix III of this draft. Given the apparently preliminary nature of this model, the EIS should disclose any peer review or validation of this model.

***Lawson et al (2004) developed this model “...to estimate historical abundance of coho salmon in the Oregon Coast Coho Salmon ESU for the purpose of modeling the independence of individual populations.”*** Given the stated purpose of this model is different than the purpose of its use in the WOPR DEIS (to “assess the effects of wood recruitment on fish habitat” DEIS Page H-1091) the EIS should provide information regarding the appropriateness of this model and any limitations or constraints on the interpretation of the results produced by it.

***For stream reaches with a gradient  $\leq 0.5\%$ , the Lawson et al 2004 model calculates the area of a stream reach and multiplies it by 0.0741 smolts per square meter. This smolt density is based on data from NMFS et al. (1983) – a report from a workshop on Northern Washington rivers held in 1982. Is this an appropriate estimate of smolt density to use for Western Oregon?*** Are there other more recent data available? Stream reaches with gradients  $> 0.5\%$  used a much higher number for smolt density (0.3405/m<sup>2</sup>) based on data from Nickelson (1998).

***The high gradient calculation in Lawson et al (2004) assumes a 50:50 pool:riffle ratio. Does the extensive stream survey data collected by state and federal agencies support this?*** What affect do deviations for a 50:50 ratio of pools to riffles have on the final calculation of fish productivity?

***The DEIS Page 351 states: “For this analysis, the fish population model is modified to be dependant on large wood contribution.” How was the model modified?*** Since the fish model is dependent on large wood what is the purpose of the fish population model?

***The DEIS Page 351 describes the Fish Productivity Index as the surface area of stream habitat weighted by the intrinsic habitat value. How is surface area of the stream***

*calculated and how is it weighted by the intrinsic habitat value?* The EIS should be explicit when describing these methods.

*The DEIS Page H-1091 states that the fish productivity index “...is based on the assumption that available habitat is proportional to available channel area...”. Is there available science to support this assumption? How will violations of the assumption affect the results?*

*The DEIS Page H-1091 states that channel width is determined from 10-m Digital Elevation Models. Specifically, how is channel width calculated from DEMs?*

*How is the surface area of the channel modified using species-specific intrinsic potential (DEIS Page H-1091)?*

*It is unclear how the maximum rate of wood recruitment is calculated (DEIS Page H-1092).* Is it the result of the three wood models assuming that the entire watershed is mature or structurally complex stands? If so, how are the OPTIONS stand tables calculated for the maximum rate? What density of trees is used? What are the values of the other input variables into the wood models?

*On DEIS Page H-1092 the paragraph near the middle of the page that begins “A minimum spacing of two pools...” appears to indicate that the analysis assumes that mature and structurally complex forests contain 0.4 pieces of wood/meter and/or 2 pools/channel width.* Was this assumption made? Did this relationship come from Beechie and Sibley (1997)? The EIS should refer to any science that supports this assumption.

*On DEIS Page H-1092, we find it difficult to follow the logical step between the ratio of wood recruitment and maximum wood recruitment to the discussion that follows, the number of pools, or the fish productivity index.* The information on this page should be edited for clarity and better presented in the EIS.

*Why was the relationship between large wood and pool frequency from second growth forests in Northwestern Washington from Beechie and Sibley (1997) used to calculate pool spacing?* Extensive stream survey data is available from Western Oregon that includes pool frequency, channel width, and large wood counts. Was validation of the regression equation (DEIS Page H-1092) conducted using these data? The EIS should provide the level of certainty in the regression relationship for the forests and streams analyzed in the EIS. Other publications provide estimates of large woody debris in undisturbed streams. Wood-Smith and Buffington (1996) found an average of approximately 3 pool related large wood obstructions per channel width in undisturbed streams and 1 per channel width in disturbed streams. The authors found values as high as 5 pieces of large wood per channel width and 3.35 pools per channel width in undisturbed streams. Undisturbed streams had significantly higher numbers of pools and pieces of large wood than disturbed streams.

***Do the models limit the maximum number of pieces of wood in a stream or is a constraint placed on the maximum value?*** If so this should be stated explicitly and because wood has many other functions in streams besides creating pools the consequences of this assumption should be discussed.

***The last paragraph on DEIS Page H-1092 is particularly difficult to understand and the logic is difficult to follow. Is there any precedent for using this index to modify fish population models?*** The DEIS should provide reference any science supporting this approach. This section should be edited and rewritten for clarity. There appear to be significant untested, unsupported assumptions buried in this section. For instance, the assumption that the relationship between habitat quality and the ratio of modeled wood values is linear. Because the preceding sections are not clear it is impossible to evaluate the validity of this method or the relevance and reliability of the results.

## **Representative Watersheds**

The analysis of impacts to fish species (ESA Listed, Special Status, and other species) is limited to five “representative” watersheds. In a scientific context the term “representative” has a specific meaning. A representative sample is a subset of a larger population that is selected to allow inferences to be made about the larger population. In this case, we assume that the larger population is all the watersheds in the WOPR area or all the watersheds with BLM lands in the WOPR area.

***Are these watersheds representative in a statistical sense (e.g. where they selected randomly or in a systematic fashion)?***

The DEIS states:

“To show the typical large wood contribution from BLM and non-BLM-administered lands, fifth-field watersheds were selected that represent a range of BLM ownership patterns and physiographic provinces.” DEIS Page 347

This passage suggests that they are not representative. Table 107 DEIS Page 348 provides further indication that the selected watersheds are not representative samples of watersheds in the plan area. For example, while 81% of watersheds in the plan area have <1/3 BLM ownership only one of the five watersheds was selected from this strata. Watersheds with 1/3-2/3 of the area under BLM management represent 18% of all watersheds but three of the five (60%) were selected and while watersheds with >2/3 BLM ownership represent <2% of all watersheds one of the five selected for analysis came from this watershed. Three of the five selected watersheds are on the Medford District (the other two are on the Salem and Coos Bay Districts).

***Because it appears that the five watersheds were not selected as a representative sample in the statistical sampling sense of the term it is inappropriate to use the results of the analysis to infer the effects of the proposed activities on other watersheds.*** We request

that the BLM conduct an analysis of the effects of the proposed activities on all fish species including ESA listed and special status species.

***The EIS should address the following questions:***

- How were the five watersheds selected?
- Were other watersheds analyzed with either a complete or partial run of the models?
- What is the current condition of streams in the representative watersheds?
- What is the proportion of LSR/LSMA and other allocations in each watershed?

***The OPTIONS timber harvest disturbance is random – was only a single run of the model performed? Did any harvest end up in these five watersheds? How much harvest occurred in the simulations and where was it located?***

## **Biodiversity**

***The action alternatives proposed in the DEIS will have significant impacts to biodiversity. The DEIS unreasonably minimizes or fails to analyze and disclose these impacts.*** We are particularly concerned that the emphasis on timber production to the exclusion of other values will result in significant impacts to biodiversity.

***The DEIS fails to consider the effects of the proposed activities on species populations.*** The DEIS relies on estimates of habitat abundance and fails to consider changes to populations of ESA listed, special status, game, fish, and other relevant species. The EIS should consider populations at scales relevant to the individual species.

***The extensive and intensive management throughout the WOPR plan area, with no provision for the retention of down wood, green trees, or snags will result in a reduction in biodiversity over the plan areas and at local sites.*** The failure to retain legacy structures in harvested areas will negatively affect many species. Commercial thinning to remove density based mortality and relatively short rotations (compared to natural disturbance regimes) will ensure that TMAs will not contain these important wildlife habitats.

***Elimination of the Northwest Forest Plan will result in significant impacts to a wide variety of species.*** In addition to late-successional reserves, the Northwest Forest Plan provides multiple levels of protection for species at both landscape and local scales. The WOPR DEIS fails to consider the impacts to biodiversity and individual species of the elimination of Northwest Forest Plan riparian reserves, survey and manage standards and guidelines, matrix standards and guidelines, 100-acre spotted owl LSRs, and other provisions that protect species and biodiversity.

***According to the DEIS, the action alternatives may result in the extinction of species.*** The DEIS Page LVII states:

“The habitat needs of forest-floor-associated species that are highly endemic to one or several locations would be at risk of decline in abundance and distribution under the three action alternatives.”

Species that are endemic to one location that suffer a decline in distribution are by definition extinct.

***The previously quoted statement from DEIS Page LVII needs further explanation.***

Why would only highly endemic species be at risk of decline under the action alternatives? What analysis is this conclusion drawn from? Why does the DEIS not conclude that all forest-floor-associated species are at risk of decline?

***The DEIS analysis fails to consider the needs of species adapted to infrequent disturbance and impacts to species with limited dispersal ability.*** The frequency of disturbance plays a large roll in the distribution of species. Many species such as woodland salamanders (*Plethodon*) and Oregon slender salamanders (*Batrachoseps wrighti*) are associated with older forests and are sensitive to disturbance. Under the action alternatives (particularly alternatives #1 and 2) timber harvest will occur at a frequency that may not allow stands to remain in late-seral condition long enough for organisms extirpated by timber harvest to recolonize the stand and rebuild populations. The EIS must analyze and disclose the effects on old-forest dependent species with limited dispersal ability. In addition, many species exist in patchy populations that are not evenly distributed on the landscape. Specific aspects of the Northwest Forest Plan were included to protect species intolerant of disturbance, with limited mobility, and patchy populations (e.g Riparian Reserves, Matrix Standards and Guideline, snag and green tree retention, and others). The EIS should fully consider the elimination of all of the aspects of the Northwest Forest Plan.

***The EIS should consider and incorporate the work of Richards et al (2002) on habitat fragmentation in Western Oregon and its effects on species with limited dispersal ability particularly their finding that:***

“...the reserve system [the Northwest Forest Plan Reserve System] will not maintain habitat connectivity throughout the landscape for species with relatively short dispersal distances. Patches showing the greatest decrease in dispersal activity following the systematic removal of late-seral forest habitat were identified as important areas of connectivity.”

Consideration of this important work is key to understanding the impacts to many species in the WOPR plan area. Because the WOPR action alternatives reduce both the reserve system and further fragment the landscape the consequences for low mobility species should be considered and disclosed.

***The analysis in the DEIS fails to consider the effects of altered fire regimes and increases in disturbance by fire will have on forest associated species.*** The DEIS discloses the changes to fire regimes under the action alternatives including significant



increases in fire hazard and severity and reductions in the amount of fire resilient forest. However, the DEIS fails to analyze the impact on biodiversity and Endangered Species Act listed, Special Status, Big Game, and other species.

***Under the Northwest Forest Plan Riparian Reserves were designed, in part, to provide refugia for old-forest associated wildlife.*** The RMA widths proposed in the WOPR action alternatives are insufficient to maintain interior forest conditions and provide refugia for forest associated species.

## **Big Game Species**

***The DEIS fails to analyze the effects of Off-Highway Vehicle use on big game and other wildlife.*** Do proposed off-highway vehicle areas overlap or are they near important deer and elk habitats or migration corridors? Will OHV use impact calving or other important parts of big game life cycles? A full range of OHV alternatives should be considered including an alternative that minimizes impacts to big game and wildlife. How will disturbance sensitive species (e.g. Bald Eagles, Northern Spotted Owls, Elk) be impacted by OHV use.

***The DEIS unreasonably gives timber production priority over the management of big game herds.*** DEIS Page 61 in the management objective section states:

“Assist the Oregon Department of Fish and Wildlife in meeting big game management goals on public domain lands and on O&C lands where the goals are consistent with the O&C Act”

The O&C act specifically mentions recreation. The EIS should consider the important role that big game provides in providing recreational opportunities, the impacts of the proposed actions. The economics section should include an analysis of the value of big game and sport fish populations and the importance of this value to providing stability to communities.

***The DEIS Page 61 under Management Actions provides an exemption for “administrative use” to road closures for the protection of big game. What actions are considered administrative use? Do they include log hauling? Will activities considered administrative use impact game species or other wildlife?***

## **Migratory Birds**

***The land birds analysis lacks sufficient detail and resolution to allow for a reasoned decision. The use of the 4 seral stages is insufficient and the analysis should consider specific habitat features including snags, hardwoods, riparian areas, large trees and other important features and the lack of (or limited) retention of legacy structures in TMAs and the impacts of post-fire logging proposed under the action alternatives.***

***The DEIS fails to implement Executive Order 13186 – “Responsibilities of Federal Agencies to Protect Migratory Birds.”*** The EIS should discuss how the proposed

changes to resource management plans relate to this order and how the BLM will comply with it (the order is available at: <http://ceq.eh.doe.gov/nepa/regs/eos/eo13186.html>).

## **Survey and Manage Species**

***Table 86 DEIS Page 265 does not include mollusks or vertebrate species protected by Survey and Manage.*** It would be useful to clarify in the heading and text that this section only refers to non-animal Survey and Manage Species.

***The DEIS fails to consider, analyze, and disclose the effects of the proposed changes to land management on species protected by the Survey and Manage provisions of the Northwest Forest Plan.*** The DEIS fails to consider the affected environment and environmental consequences for non-animal Survey and Manage species. The discussion of non-animal Survey and Manage Species on DEIS Page 265 refers the reader to the 2004 Survey and Manage FSEIS for “comprehensive information” regarding Survey and Manage species. The 2004 Survey and Manage FSEIS provides an overview of Survey and Manage Species and presents a summary of the results of the outcomes analysis conducted for the FSEIS. The species-specific discussion of the current condition and environmental consequences in this FSEIS is limited to species that are predicted to have insufficient habitat to support stable populations in all or part of the NWFP area.

The DEIS presents no discussion of the affected environment for vertebrate and invertebrate animal Survey and Manage species. The DEIS states that under the No Action alternative that effects on these species will be similar to the effects on the Northern Spotted Owl and does not analyze the effects on these species under the action alternatives.

***The DEIS must analyze the removal of the Survey and Manage Standards and Guidelines for all alternatives.*** The DEIS Page 716 Table 205 in the Environmental Consequences section states that Survey and Manage Species are “Included under the No Action Alternative only.”

***The DEIS does not analyze the effect of removing the Survey and Manage Standards and Guidelines.*** The DEIS Page 716 Table 205 in the Environmental Consequences section states: “Assume similar effects as those for the northern spotted owl.” This assumption is flawed. Species were included in the Survey and Manage Standards and Guidelines because the Northwest Forest Plan system of reserves, designed to conserve the Northern spotted owl, failed to protect these species adequately. The primary consideration that placed species on the Survey and Manage list was that the effects of land management on these species were not the same as on Northern spotted owls. Significant differences in distribution, life history, mobility, and ecology exist between survey and manage species. Most survey and manage species complete their entire life cycle at a scale that is far smaller than the Northern spotted owl.

The DEIS fails to analyze the effects of the proposed changes to land management on Survey and Manage and instead relies on a simple assertion that the effects are similar to the Northern spotted owl. The 9<sup>th</sup> Circuit Court has found that this type of assertion does not meet the requirement of NEPA to analyze and disclose the effects of proposed actions:

“We have repeatedly explained that generalized, conclusory assertions from agency experts are not sufficient; the agency must provide the underlying data supporting the assertion in language intelligible to the public. *See Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 864 (9th Cir. 2005); *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 996 (9th Cir. 2004). “[W]hile the conclusions of agency experts are surely entitled to deference, NEPA documents are inadequate if they contain only narratives of expert opinions.” *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 996.” (See attached document MT\_Ashland\_Opinion.pdf)

Furthermore, since 53 species analyzed in the 2004 Survey and Manage SFEIS “...would have insufficient habitat (including known sites) to support stable populations in all or part of the Northwest Forest Plan area” assuming that the WOPR alternatives have similar effects on these species and Northern spotted owls a logical conclusion might be that Northern spotted owls will not have sufficient habitat to support stable populations in all or part of the Northwest Forest Plan Area.

***No analysis of the effects on Survey and Manage plant, lichen and fungi species is presented in Chapter 4, the Environmental Consequences section of the DEIS.***

***The cumulative effects of the 2004 SFEIS, the 2007 Final Supplement to the 2004 SFEIS, and the 2007 Record of Decision To Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines and the WOPR alternatives should be analyzed and disclosed.*** Currently, implementation of the 2004 and 2007 Survey and Manage Documents are under a court injunction. If the US Forest Service and BLM are successful in correcting the deficiencies in these documents identified by the courts and/or one of the WOPR action alternatives is selected Survey and Manage will be eliminated. In either case, the WOPR EIS must consider and disclose the cumulative effects of eliminating the Survey and Manage Standards and Guidelines and the WOPR alternatives.

***It is difficult to reconcile the results of the Survey and Manage documents and the conclusions presented in the WOPR DEIS.*** The analysis presented in the Survey and Manage documents assumed the continued implementation of the Northwest Forest Plan and found that “...for 133 species there would be insufficient habitat (including known sites) to support stable populations in all or part of the Northwest Forest Plan area under all alternatives due to factors beyond the control of the Forest Service and BLM.” and 53 species “...would have insufficient habitat (including known sites) to support stable populations in all or part of the Northwest Forest Plan area”. Assuming the elimination of Survey and Manage either through the Survey and Manage NEPA documents or through the WOPR EIS it is reasonable to expect worse outcomes given the elimination of the Northwest Forest Plan under the WOPR action alternatives.

***The EIS should incorporate existing species information compiled for Survey and Manage and Special Status/Sensitive Species Programs.*** Extensive information has been compiled for many Survey and Manage Species including Management Recommendations and Conservation Assessments written by agency experts that would provide a convenient accessible source for the analysis of effects to these species.

<http://www.blm.gov/or/plans/surveyandmanage/mr.htm>

<http://www.fs.fed.us/r6/sfpnw/issssp/planning-documents/assessments.shtml>

Other important documents and analyses to consider include the Annual Species Reviews and information contained in the Survey Protocols.

## **Special Status Species / BLM Manual 6840**

***The DEIS action alternatives fail to follow the policy outlined in BLM Manual 6840.***

The DEIS Page 61 states that BLM sensitive or assessment listed species

“...will be managed on public domain and on O&C lands where protection does not conflict with sustained yield forest management in areas dedicated to timber production.”

And continues on DEIS Page 61:

“This is so that special status designation would no longer be warranted and so that actions will not contribute to the need to list the species under the Endangered Species Act.”

On the same page:

“Where conflicts with sustained yield management occur, protections on O&C lands will only be applied to prevent extinction of a species even if it is not yet listed under the Endangered Species Act.”

***The species-specific effects of eliminating Special Status Protection on O&C lands and how BLM Manual 6840 direction will be reconciled with this decision. How will the BLM prevent species declines and trends towards ESA listing while eliminating protection across approximately 2 million acres.***

***Elimination of the Northwest Forest Plan will result in a trend towards Endangered Species Act listing or listing of many species.*** For specific examples, see discussion of Siskiyou Mountains salamander and southern torrent salamander. The analysis should provide a discussion of the species outcomes from the FEMAT report and other Northwest Forest Plan documents and reviews.

***The EIS should consider and disclose the changes to Special Status Policy under the proposed action alternatives. The DEIS Page 596 states:***

“Under the No Action Alternative, conservation measures would be applied to all habitat groups under the BLM Special Status Species Policy

and Survey and Manage on all BLM-administered lands in the planning area.”

“Under the action alternatives, conservation measures from the BLM Special Status Species Policy would be applied on Public Domain lands and O&C land that are not in the harvest land base.”

and again on page 719:

“On all BLM-administered lands under the No Action Alternative, and on public domain lands and on the non-harvest land base on O&C lands under the action alternatives, special status species would be managed to avoid contributing to the need to list as threatened or endangered under the Endangered Species Act.”

The consequences of this change in management should be discussed and species-specific impacts disclosed in the EIS. Additionally, will Special Status Policy apply on Administratively Withdrawn areas (TPCC unstable lands) that are adjacent to TMA and are on O&C lands?

***The following statement from DEIS Page LVI is unsupported in the DEIS and conflicts with past assessments and species reviews conducted by the BLM and USFS:***

“Under the No Action Alternative and on the public domain lands under the three action alternatives, there would be little risk of loss of populations and extirpation or extinction of bureau sensitive species or bureau assessment species.”

***The 20-population rule is not supported by science.*** The statements and conclusions in the DEIS regarding the relative conservation status of species with more or fewer than 20 populations is unsupported in the DEIS and in the conservation literature. A trend towards ESA listing starts well before a species declines to 21 populations.

***The DEIS does not consider the size, extent, or distribution of populations and only applies a threshold number (20) to determine if species receive any protection on O&C lands. An old-forest associated species with many more than 20 populations may be at risk of extinction if all populations are on TMA lands.***

***How is “population” defined in the context of the 20 populations statements.*** Table 255 page 1065 includes an “\*” to denote species with >20 populations. How was this determined? How was population defined? Are all populations considered extant? Are all populations verified recently? Are the records old and of uncertain status?

***The DEIS fails to consider important factors such as species abundance, distribution, and range in the effects analysis.*** Basic information regarding such factors as species range and distribution is both widely available for most species and critical to assessing the impacts of the proposed changes to land management. Species associated with old forests whose range is not coincident with LSMAs under the proposed management plans

will be negatively impacted. The analysis in the DEIS only considers the amount of predicted older forest and fails to consider their geographic distribution and relevancy of LSMAs to individual species. The analysis assumes that stands in a particular seral stage all have the same value to species and does not consider factors such as patch size, frequency of disturbance, aspect, and connectivity at scales appropriate to the species.

***The DEIS Page 61 states: “Management would be consistent with approved conservation plans. See appendix G. Wildlife.”*** Appendix G provides no indication of conservation plans. Which species is the DEIS referring to? Where can the reader find these conservation plans?

## **Siskiyou Mountains Salamander**

***The DEIS fails to consider, analyze, and disclose the effects of the proposed changes to land management plans on the Siskiyou Mountains salamander.*** The DEIS only mentions this species in 2 places, in Tables 100 and 255. No discussion of biology, habitat, conservation status, or existing conservation plans is presented.

***The analysis of effects on species grouped under the designation “forest floor species” is not useful in assessing the Siskiyou Mountains salamander and fails to incorporate relevant information on species biology and distribution. The analysis provides limited detail and lacks basic information regarding needed to judge the validity of the method used.*** The DEIS Page 721 states that 20 watersheds were analyzed but provides no information regarding which watersheds were analyzed, what scale watersheds were used, and how they were selected. Were any watersheds selected from within the range of the Siskiyou Mountains salamanders?

Consideration of the landscape context is important in the assessment of the impacts to species. The entire range of Siskiyou Mountains salamanders on BLM lands is TMA under all three action alternatives. How relevant are the 20 watersheds analyzed to the Siskiyou Mountains salamander? Species ranges and reserved lands are not randomly distributed across the landscape. The effects to species with small ranges relative to the overall planning area may be quite different from an average condition of watersheds in the planning area.

The analysis assumes that all portions of the landscape are of equal value to species. However, Siskiyou Mountains salamanders occupy very specific habitat composed of rocky soils under closed canopy forests. They are restricted to low to moderate elevations and are primarily found on north facing aspects. Their range in Oregon is limited to the Applegate River Watershed south of the town of Ruch.

Many of these comments are relevant to other species and the EIS should consider unique aspects of biology and distribution in the effects analysis.

***The DEIS fails to incorporate information and conclusions from Annual Species Reviews and other previous analyses.*** The EIS should reconcile the findings of these assessments and the conclusions presented in the WOPR EIS for Siskiyou Mountains salamanders and all other relevant species.

***The proposed changes to land management plans may lead to Endangered Species Act listing of the Siskiyou Mountains salamander.*** The US Fish and Wildlife Service issued a 90-day finding on a petition to list the Siskiyou Mountains salamander (March 29, 2007) that found that the petition presented substantial information indicating that the listing of this species may be warranted due to the destruction or modification of habitat. The USFWS found that the petition did not present significant information indicating that the species warranted listing due to the inadequacy of existing regulations, citing the Survey and Manage Standards and Guidelines of the Northwest Forest Plan as an adequate existing regulation on federal lands.

In July 2007, the BLM published the *Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans within the Range of the Northern Spotted Owl*. While implementation of the series of NEPA documents eliminating Survey and Manage is currently enjoined by the courts the WOPR EIS must discuss the direct and cumulative effects of the Elimination of Survey and Manage via either the 2007 Survey and Manage ROD or the WOPR FEIS on Siskiyou Mountains salamanders and other affected species. This analysis should include the increased risk of ESA listing due to the loss of regulatory mechanisms to protect the species and loss of other Northwest Forest Plan provisions that protect these species including riparian reserves, 100-acre owl LSRs, and matrix Standards and Guidelines.

***The DEIS fails to consider the Candidate Conservation Agreement, Conservation Strategy, and Conservation Assessment for the Siskiyou Mountains salamander.*** The DEIS does not reference these documents. The EIS must discuss the relationship of these agreements to the WOPR alternatives and the effects of the WOPR on these agreements.

The Conservation Strategy (Page 6) states that an immediate review of the plan would be triggered by a number of factors including "...a significant management direction change on Federal lands within the area of the conservation strategy." The EIS should discuss the implications of the change of management of BLM lands proposed by the WOPR DEIS and the potential trend towards ESA listing by the loss of the Candidate Conservation Agreement. The Conservation Strategy is based on the assumption that all aspects of the Northwest Forest Plan would be continued to be implemented:

"The Siskiyou Mountains salamander conservation strategy builds upon the existing reserve systems and the Standards and Guidelines established under the Rogue River NF Land and Resource Management Plan, the Medford BLM Resource Management Plan and the Northwest Forest Plan. In this area, the reserve system includes congressionally withdrawn areas, riparian reserves, owl habitat areas, botanical reserves, late-successional reserves, and special emphasis areas (Figure 2)."

The selection of high-priority sites for protection of salamander populations purposely selected populations on or adjacent to 100-acre owl LSRs, large riparian reserves, and other areas assumed to be protected under the Northwest Forest Plan. Other aspects of the Northwest Forest Plan incorporated into the Conservation Strategy included down wood retention, green tree retention, and 15% retention in harvest units.

## **Tailed Frog**

***The DEIS fails to consider and disclose the effects of the proposed changes to land management plans on the Inland tailed frog (= Rocky Mountain tailed frog, *Ascaphus montanus*). A search of the DEIS only finds this species listed in Table 255 Page 1065. No information or analysis of the effects of the proposed actions on this BLM sensitive species is presented in the DEIS.***

## **Larch Mountain Salamander**

***The DEIS fails to consider and disclose the effects of the proposed changes to land management plans on the Larch Mountain salamander and contains factual errors regarding the habitat and distribution of this species. DEIS Table 205 Page 714 states:***

“New data showing it restricted to Columbia Gorge and talus-skree habitat. The BLM does not have this habitat. Based on extensive surveys on Mt Hood NF. WA habitat data not seem to apply to OR.”

The EIS should provide a source and description of the “new data” that this passage mentions. This statement is contradicted by information contained in Survey and Manage Annual Species reviews and other Survey and Manage documents, the GeoBob database, published peer-reviewed literature, and a recently published field guide chapter.

The species is not restricted to the Columbia River Gorge and talus-scrub habitat. South of the Columbia River Gorge, the species has been observed within 2 miles of BLM managed lands (designated TMA under WOPR alternative #2), the type locality on Larch Mountain is approximately 3.5 miles northeast of BLM managed lands, the species has been observed as far as 15 miles south of the gorge in the Bull Run Watershed on USFS lands and 18 miles south of the Columbia River Gorge in the Hood River drainage. Records for all these observations are in the GeoBob database and were entered in the ISMS database prior to the creation of the GeoBob database.

While historically associated with rocky soils under forest canopy, the species has been found several habitat types including old-growth forest with loamy soils (Jones et al 2005). Inclusion in the Survey and Manage program was contingent on a strong association with late-seral forests and agency documents relating to Survey and Manage document the association of this species to late-seral forested habitats.

As noted elsewhere in these comments, unsupported assertions are not adequate to comply with NEPA (See attached document MT\_Ashland\_Opinion.pdf). The assertion that Larch Mountain salamander habitat is not found on BLM land should be documented to meet this standard. The meaning of the last two sentences of the statement are somewhat unclear but appear to indicate that extensive surveys on the Mt. Hood NF have somehow demonstrated that the species uses different habitat in Washington and Oregon. We have reviewed the survey data in the GeoBob database and find few surveys have been conducted for this species in Oregon under the Survey and Manage program. The EIS should document the surveys referred to in this statement and how differences in habitat use between Oregon and Washington were established from these surveys.

***The EIS should consider and disclose the cumulative impacts of the elimination of the Survey and Manage Standards and Guidelines and all other aspects of the Northwest***



**Forest Plan on Larch Mountain salamanders.** The analysis should incorporate past work including Survey and Manage Annual Species Review documents and reconcile the environmental effects predicted by the WOPR analysis with past analyses and documents.

***The DEIS on Table 100, Page 321 includes Larch Mountain salamander under the category “Species effects that are common to all alternatives. Includes species that are associated with special habitats or features. Also includes accidental or occasional migrants where impacts are unlikely.”*** How were the effects to Larch Mountain salamanders and the other species in this category determined? As mentioned above “Generalized, conclusory assertions from agency experts are not sufficient...”. The EIS must discuss the underlying analysis and information that supports this conclusion.

## **Oregon Slender Salamander**

***The DEIS fails to adequately consider the effects of the proposed changes in land use on the Oregon slender salamander.*** This species is strongly associated with old-growth, is not resilient to disturbance, occurs in a limited band of elevation, has a small range in the Northern Oregon Cascades, and is strongly associated with large down wood of specific decay classes. Alternative #2 removes all BLM LSR from this species range. The BLM/USFS Special Status Program has written a Conservation Assessment for this species and it was proposed for inclusion in the Survey and Manage Program and an Annual Species Review was conducted. The EIS should consider the biology and distribution of this species and incorporate the reviews already conducted by the BLM and USFS.

## **State Listed Species**

***The DEIS fails to disclose the effects of the proposed actions on species listed as threatened or endangered by the State of Oregon.*** The DEIS Page 60 states that species listed by the State of Oregon will be “...managed in accordance with cooperative management agreements.” Which species in the project area are state listed? Which ones have cooperative management agreements? Where can the reader find these agreements? In the absence of a cooperative management agreement, the DEIS Page 61 states that these species “...will be managed on public domain and on O&C lands where protection does not conflict with sustained yield forest management in areas dedicated to timber production.” Because of this significant difference in management, the EIS must disclose which species have cooperative management plans, what the current status and distribution of these species is and analyze the direct, indirect, and cumulative impact of the alternatives.

## **Northern Spotted Owl**

***The DEIS relies on the Draft recovery Plan for the Northern Spotted Owl and the Purpose and Need statement includes the need to coordinate the WOPR with the Draft Recovery Plan and Critical Habitat. The Draft Recovery Plan has failed peer review, is mired in controversy, and has an uncertain future. Rather than write a lengthy critique of the WOPR DEIS analysis we are attaching and submitting as comments the following attached documents:***

Carroll C and Johnson DS. In Press. The importance of being spatial (and reserved): Assessing northern spotted owl habitat relationships with hierarchical Bayesian models. Conservation Biology. (CarrollJohnson\_CB\_inpress.pdf)

DellaSala DA, Cullinan TP. August 17, 2007. Comments on Draft Recovery Plan for the Northern Spotted Owl. (NCCSPAudubonowldraftplancomments8-17-07.doc)

Dugger KD. No Date. Review of 2007 Northern Spotted Owl Draft Recovery Plan. (Dugger\_NSO\_comments.pdf)

Dunk JR. September 24, 2007 Comments on the Proposed Critical Habitat for the Northern Spotted Owl. Dr. Jeffrey R. (JRD comments on proposed critical habitat for NSO.pdf)

Environmental Protection Agency. August 29, 2007. EPA Comments on the Draft Recovery Plan for the Northern Spotted Owl. (spotted owl epa letter.pdf)

Franklin AB. June 25, 2007. Comments on Draft Recovery Plan for the Northern Spotted Owl. (Franklin\_Comments\_NSO\_Plan\_25june2007.pdf)

Olson GS. August 20, 2007. Comments on Draft Recovery Plan for the Northern Spotted Owl. (olson\_comments\_NSO\_plan\_20august2007.pdf)

The Society for Conservation Biology (North American Section). August 24, 2007. Comments on Draft Recovery Plan for the Northern Spotted Owl. (SCB recovery plan comments to FWS.pdf)

The Society for Conservation Biology (North American Section) and The American Ornithologists' Union. July 5, 2007. Peer review of Draft Recovery Plan for the Northern Spotted Owl. (SCB\_AOU\_NSO\_comments\_5july2007.doc)

The Wildlife Society. August 9, 2007. Peer review of Draft Recovery Plan for the Northern Spotted Owl. (TWS comments on NSO plan 8 9 07.pdf)

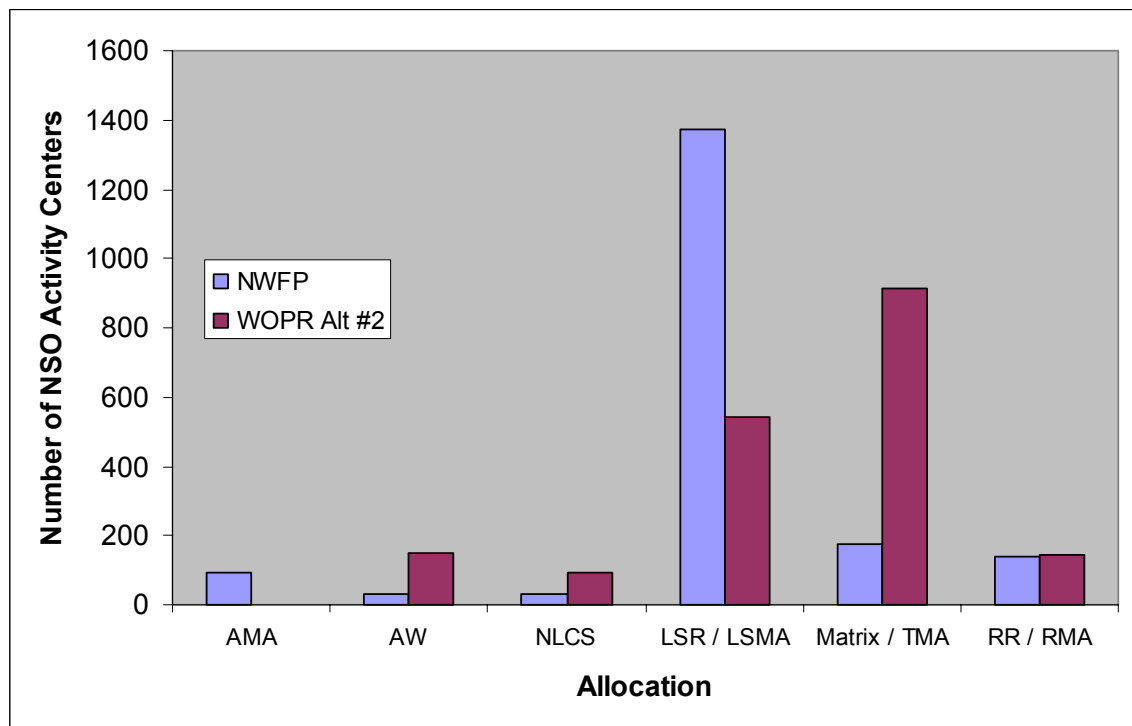
***We recommend that the Final EIS consider an alternative or alternatives that provide a greater level of protection for the Northern spotted owl and other species associated with older forests.*** The Northern spotted owl continues to decline and the further loss of habitat will only further limit future options for recovering the species.

***The EIS should consider and disclose the current status of Northern spotted owl populations (and all other ESA listed and special status species) and the effects of the proposed changes to land management.*** Using GIS data from the BLM's webpage we conducted the following simple analysis. Northern spotted owl activity centers were plotted on a map of land use allocations under the no action alternative and alternative #2. The number of activity centers was summarized by allocation for each alternative resulting in the following (Table 1, Figure 1):

Table 1. Number of spotted owl activity centers found in each land allocation class under WOPR alternatives NA and Alternative #2.

Allocation	NA	Alt #2
AMA	93	0
AW	32	151
NLCS	33	94
LSR / LSMA	1371	541
Matrix / TMA	178	914
RR / RMA	140	147
Total	1847	1847

Figure 1. Number of spotted owl activity centers found in each land allocation class under WOPR alternatives NA and Alternative #2.



Our results found 830 fewer owl activity centers protected in LSRs under the no action alternative than under alternative #2. These activity centers represent 45% of the total known activity centers on BLM lands in Oregon. Almost all of these activity centers lost from LSRs end up in TMAs under alternative #2. The increase in matrix/TMA activity centers is 736 and administratively withdrawn activity centers increases by 119. Because the DEIS states that administratively withdrawn activity lands may be managed like surrounding allocations we are concerned that a large portion of the administratively withdrawn activity centers will also be lost.

The EISs must discuss effects to populations and discuss how the potential elimination of over 50% of the remaining owl activity centers complies with the Endangered Species Act and the BLM's mandate to recover Endangered Species.

## **Marbled Murrelet**

***The proposed action alternatives will jeopardize the continued existence of the Marbled Murrelet.*** The current status and abundance of murrelet populations and the direct, indirect, and cumulative effects of all proposed actions on murrelet populations should be considered and disclosed in the EIS. The EIS should conduct and present an analysis similar to our analysis of spotted owl activity centers that discloses the effects of the changes to land management allocations on known murrelet localities.

***The further reduction in marbled murrelet habitat under the action alternatives is unacceptable.*** The murrelet continues to decline and additional losses to habitat will only reduce future options and the likelihood of recovering this species.

## **ESA Listed Anadromous Fish**

***The EIS should consider and disclose the effects of the proposed action on Designated Critical Habitat for all ESA listed species including anadromous fish.***

**Lower Columbia River Chinook Salmon – Threatened.** In Eagle Creek Representative Watershed. Critical Habitat Designated.

The DEIS Page H-1073 states: “Most populations in this ESU have not seen as pronounced increases in recent years as occurred in many other geographic areas.” Given this statement, the EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions. This ESU is only found in one of the five “representative” watersheds (Eagle Creek) with limited areas of BLM managed lands. This analysis is insufficient to comply with NEPA and requirements of the ESA.

**Upper Willamette River Chinook Salmon - Threatened.** In Eagle Creek Representative Watershed. Critical Habitat Designated.

The DEIS Page H-1075 states “...most natural-origin spring-run Chinook populations are likely extirpated, or nearly so.” Given this statement, the EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions.

**Southern Oregon/Northern California Coast Coho Salmon – Threatened.** Found in three Medford District representative watersheds. Critical Habitat Designated.

The DEIS Page H-1076 states that populations in this ESU “...exhibit low population abundance relative to historical numbers and long-term downward trends in abundance.” Given this statement, the EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions.

The DEIS fails to disclose the effects of the proposed actions in the Klamath Resource Area and Medford Districts that may impact water quality and quantity in the lower Klamath River and consequently may affect this ESU.

**Lower Columbia River Coho Salmon - Threatened.** In Eagle Creek Representative Watershed. Critical Habitat Designated.

The DEIS Page H-1077 states “In the only two populations with significant natural production (Sandy and Clackamas rivers), short- and long-term trends are negative, and productivity is down sharply from recent (1980s) levels.” Given the dire situation with this ESU, the EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions. This ESU is only found in one of the five “representative” watersheds (Eagle Creek) with limited areas of BLM managed lands. This analysis is insufficient to comply with NEPA and requirements of the ESA.

**Lower Columbia River Steelhead – Threatened.** In Eagle Creek Representative Watershed. Critical Habitat Designated.

The DEIS Page H-1078 states “Abundance of most populations is relatively low, and those populations for which there is adequate modeling data are estimated to have a relatively high extinction probability.” Given this statement, the EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions. This ESU is only found in one of the five “representative” watersheds (Eagle Creek) with limited areas of BLM managed lands. This analysis is insufficient to comply with NEPA and requirements of the ESA.

**Upper Willamette River Steelhead – Threatened.** Not in any of the Representative Watersheds. Critical Habitat Designated.

The DEIS Page H-1079 provides a qualitative assessment for 2001-2002 runs but does not present more recent data. The EIS should present data from Willamette Falls fish counts and other quantitative data that is available. No analysis is conducted for this ESU as it is not found in any of the five “representative” watersheds. The EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions.

**Columbia River Chum – Threatened.** In Eagle Creek Representative Watershed. Critical Habitat Designated.

The EIS should conduct an ESU specific analysis that documents the direct, indirect, and cumulative impacts to this ESU and designated critical habitat under the proposed actions. The EIS should provide information on the distribution of this ESU and the geographic relationship of occupied and critical habitat to proposed actions. This ESU

is only found in one of the five “representative” watersheds (Eagle Creek) with limited areas of BLM managed lands. This analysis is insufficient to comply with NEPA and requirements of the ESA.

## **Shortnosed Sucker and Lost River Sucker**

***The EIS should consider and disclose the impacts of all actions in the WOPR alternatives on Lost River and shortnosed sucker and their critical habitat.***

***The DEIS fails to analyze the effects of the alternatives on the Lost River and shortnosed suckers.*** Both species are listed as Endangered under the Endangered Species Act and are endemic to the Upper Klamath Basin. The final rule listing the species and the recovery plan written for them by the US Fish and Wildlife Service state that causes of the species decline include “...water quality problems associated with timber harvest, removal of riparian vegetation, livestock grazing, and agriculture.” (USDI 1993). Both species live in lakes and spawn in streams or springs. The DEIS presents no analysis of the impacts to these species.

***The EIS should discuss the threats to these species and how a wood and coho salmon rearing habitat model run on five watersheds outside the range of these species complies with NEPA and ESA requirements.*** It is difficult to follow the logic of the fish and wood model that includes high intrinsic potential for juvenile coho salmon when according to the DEIS “High intrinsic potential streams have not been determined for bull trout, Lost River suckers, or shortnose suckers.” (DEIS Page 338).

***What parts of there former ranges have Lost River and shortnosed suckers been extirpated from?*** The DEIS Page 336 states, “Currently, the shortnose sucker and the Lost River sucker occupy only a fraction of their historic range...”

***The EIS should discuss the affects of all proposed activities on lake water quality, spawning habitat condition and the impacts on the species.*** In particular, the grazing program on the Klamath RA may contribute to water quality problems in occupied sucker habitat. The recovery plan specifically mentions the role of grazing in the deterioration of water quality in the Klamath Basin:

“Grazing practices have led to severe degradation of the riparian areas and have therefore greatly increased the nutrient and sediment export potential (Karr and Schlosser 1978; Schlosser and Karr 1981; Lowrance et al. 1984; Peterjohn and Gorrell 1984; Gregory et al. 1991).” (USDI 1993)

as does the WOPR DEIS:

“Grazing in the riparian zone has eliminated streambank vegetation, and has added nutrients and sediment to river systems (USDI, USFWS 2003d).”

Other activities such as timber harvest that increase sediment input and cause bank erosion have also been identified as contributing to water quality problems in the

Klamath Basin. The WOPR DEIS (page 337) states that "...habitat degradation is considered the primary cause." of the decline in sucker populations.

***The Final EIS should discuss the proposed alternatives and their relationship to the Recovery Plan and assumptions made about BLM management as evidenced in statements such as:***

"For the Klamath River Canyon area, BLM's current management direction is to allow no new roads and to perform minimal forest management activities, with recreational, scenic, and wildlife values to be emphasized." (USDI 1993)

How will changes to ACEC status in the Klamath River Canyon affect the recovery plan and the species?

***BLM has identified responsibilities in the recovery plan – how do these relate to the actions proposed in the WOPR DEIS?***

***How will the proposed activities help achieve the Oregon DEQ water temperature standard (64.4 degrees) for sucker species. Which waters that don't comply with this standard are occupied by these species on BLM lands?*** Given the lack of analysis of the effects of the proposed activities on the two sucker species, the decision maker is unable to compare the effects of the proposed actions on these species.

***Is funding available for the proposed range improvements under the action alternatives? What will the effects of the proposed actions be on suckers if the range improvements are not implemented?***

"Grazing in riparian areas can reduce and eliminate stream bank vegetation and can increase sediment to stream channels. Within the planning area, sedimentation is a limiting factor for endangered Lost River and Shortnose suckers (USDI, USFWS 2003d)."

***The DEIS provides no support for the following assertion regarding sedimentation in the Klamath Basin:***

Even though there would be short-term (less than one year), localized increases in fine sediment delivery from culvert, grazing, and other management activities under all four alternatives, there would be less than a 1% increase in fine sediment compared to existing rates from road-related activities, which often accounts for the majority of sediment that is delivered to stream channels. See the *Water* section in this chapter." (DEIS PAGE 743)"

In addition to roads, erosion from uplands and stream banks are significant sources of sediment. See the Gerber – Willow Valley Watershed Analysis (USDI and USDA 2003) for specific sources and rates of sediment production in the area.

## **Bull trout**

***The DEIS fails to analyze and disclose the effects of the proposed actions to ESA Threatened Bull Trout and the Draft Recovery Plan and Critical Habitat for this species.*** The EIS should disclose the effects of the proposed actions on this populations and populations that may be affected by watershed impacts or downstream impacts. The BLM's role in the draft recovery plan should be discussed and the relationship of the DEIS alternatives to bull trout reintroductions proposed in the recovery plan should be documented. None of the five "representative" watersheds analyzed currently contain Bull Trout.

The entire McKenzie River is Designated Critical Habitat and will likely be impacted by actions proposed in the WOPR DEIS. The Middle Fork Willamette River is Designated Critical Habitat and significant areas in the Eugene District drain into this reach of the Willamette potentially impacting Bull Trout and Designated Critical Habitat.

***The statement on DEIS Page 336 that "There is less than one stream mile with bull trout on BLM-administered land." conflicts with other information.*** Bull trout are found in the McKenzie River and DEIS Page 1338 states that they are found in the *Low Elevation Headwaters of the McKenzie River* ACEC and that 11 miles of the McKenzie River are suitable for inclusion in the Wild and Scenic River system. DEIS Page 1347 states that the potential *Four Mile* ACEC contains Bull Trout.

The ODFW's McKenzie River Bull Trout Stock Status Report (available at: <http://www.dfw.state.or.us/swwd/McKBullt.html>) reports that the Bull Trout population on the McKenzie River below Trail Bridge Reservoir "... is the largest and appears to be the most secure in the Willamette Basin." The EIS should consider and disclose the effects of direct, indirect, and cumulative impacts to the McKenzie River populations and the role of this population in recovering the species in the Willamette Basin.

***The EIS should reference the Willamette Basin Bull Trout Recovery Plan and document how the actions proposed in the WOPR DEIS conform to this plan.*** Examples of items from the recovery plan that should be discussed include:

"Complete an access and travel management plan for Federal lands in the upper Middle Fork Willamette River."

and

"1.5.1 Identify existing road systems that have a high risk of adversely affecting bull trout streams. Negative changes include sediment delivery and natural drainage networks, interception of groundwater, and interruption of delivery of woody material. Road management plans should be developed to modify, reduce, or eliminate such roads."

## **Oregon Chub**

***The DEIS fails to consider the impacts of the proposed activities on Oregon chub and contains factual errors and omissions regarding this species.*** The DEIS Page 336 states



that the Oregon chub is listed as "...threatened or endangered..." and "...it occurs only on private land." The Oregon chub recovery plan (USFWS 1998) states that only 9 of 24 known sites for this species are on private lands and that the species is listed as endangered under the ESA.

***The DEIS fails to discuss the Conservation agreement signed by the Bureau of Land Management State Director and included as an appendix to the recovery plan (USFWS 1998).***

## **Jenny Creek Sucker and Jenny Creek Redband Trout**

***The DEIS states:***

"Habitat for these special status fish species is affected by the same processes that affect the listed fish species. Therefore, the description of current conditions for listed fish species provides a sufficient description of conditions for the special status fish species."

***The FEIS should discuss the threats to these species and how a wood and Coho salmon rearing habitat model is relevant to the habitat occupied by these species.*** See our discussion of the deficiencies of the aquatics and fish habitat analysis. In addition, the Final EIS should reference the Jenny Creek Late-Successional Reserve Assessment and the Jenny Creek Watershed Analysis fully to review the impacts of the proposed land management changes on these endemic fish.

## **Torrent Salamanders**

Southern Torrent Salamander (*Rhyacotriton variegatus*) was petitioned for listing under the Endangered Species and on June 6, 2000 the US Fish and Wildlife Service determined that listing was not warranted (USDI 2000). It is currently a USFWS Species of Concern in Oregon and listed as a vulnerable species by the Oregon Department of Fish and Wildlife. In their finding the Fish and Wildlife Service relies heavily on the Northwest Forest Plan's Aquatic Conservation Strategy stating:

"Based on the evidence that southern torrent salamanders appear to stay in very close proximity to watercourses, we believe the riparian reserve system of the currently adopted and court-tested Forest Plan [Northwest Forest Plan] provides adequate protective measures to maintain the quality of most of the riparian and aquatic habitats for the southern torrent salamander on public lands across the range of the species."

and conclude:

"...we believe that current regulatory practices, while not ideal, provide sufficient protection to insure that the existence of the species is not threatened at this time. While recent improvements in protections of southern torrent salamander habitats have been implemented on Federal

lands, habitats on private lands are still vulnerable until specific changes in policy and procedures change the way these habitats are protected.”

***While this species has a limited range that includes all WOPR BLM districts with the exception of the Klamath Falls Resource Area, has a demonstrated association to older forests, and is negatively impacted by timber harvest, we find no mention of this species in the WOPR DEIS.***

***We request that the Final DEIS analyze and disclose the direct, indirect, and cumulative impacts to this species and disclose any trend towards listing that might occur under the activities proposed in the WOPR DEIS.*** This species is found in small seeps and springs and high order, high gradient streams, is particularly vulnerable to changes in microclimate, and has limited capacity to disperse across the landscape. The elimination of riparian reserves along intermittent streams and small seeps and springs may significantly affect this species.

## **Terrestrial Habitats**

### **Post-fire Logging**

***The DEIS fails to consider the effects of post-fire logging and other forms of “salvage” on terrestrial habitats and species.***

Many studies have documented widespread impacts of post-fire logging on ecosystem processes and habitat structures (e.g., see Beschta et al. 2004, Lindenmayer et al. 2004, Noss and Lindenmayer 2006, Donato et al. 2006, Thompson and Spies 2007). In general, post-fire logging impacts are known to: (1) remove biological “legacies” important in restoring forest function after natural disturbances; (2) compact soils that can magnify erosion problems with impacts to streams; (3) compound the initial disturbance; (4) spread weeds; (5) increase mortality of conifer seedlings; and (6) elevate fire hazard due to excessive build up of logging slash. Additionally, Clark (2007) documented significant impacts to the northern spotted owl following post-fire clearcutting in burn areas in southwest Oregon. Based on these findings, Clark (2007) recommended no harvest within 1.5 km of owl activity sites following natural disturbances. In sum, not a single study has documented ecosystem benefits from post-fire logging, yet BLM would permit post-fire logging in the LSMAs following disturbance that is likely to further impact threatened species, degrade water quality, inhibit forest establishment, and elevate fire risks. The impacts of post-fire logging in light of this research need to be fully addressed in the DEIS, including how much incidental “take” post-fire logging in the LSMAs could trigger.

### **Landslides**

***Will timber harvest, road building, or other activity occur on lands identified as unstable in the TPCC system?*** The EIS must consider and disclose the impacts of these activities especially as they relate to the frequency, scale, consequences, and other impacts to resources.

***The DEIS Page 742 states:***

“...rate of susceptibility to shallow landsliding from timber harvesting and road construction over the next 10 years would not increase. This is because fragile soils susceptible to landsliding are either currently withdrawn under the timber productivity capability classification system as nonsuitable forest or would be withdrawn when identified with a project activity. See the Water section in this chapter.”

***However, the DEIS Page 63 states that TPCC withdrawn lands “...may be managed similarly to the adjacent or surrounding land use allocations.”*** The EIS should clarify what management practices will occur on TPCC withdrawn lands and include this information in the consideration of water quality, sediment, and frequency of disturbance to streams.

***The DEIS Page 763 states that no increase in landslides will occur under the proposed actions.*** However, on DEIS Page 379 it states “Weaver and Hagans (1996) found that 71% of observed landslides in western Oregon from the February 1996 storms were initiated from recent regeneration harvests...” Given the increase in regeneration harvest under the proposed actions how does the BLM predict that no increase in landslides will occur.

***The EIS should consider the findings of Robinson et al (1999) especially regarding the impacts of timber harvest and associated activities such as road building on landslides.***

***The EIS should consider and disclose the effects of increases in landslides and debris torrents to human safety, damage to property, and economic costs associated with landslides and debris torrents.***

## **Hardwoods**

***The DEIS fails to disclose the extent or impact of converting hardwoods and brush fields to plantations.*** The DEIS Page 52 states that under all action alternatives brush or hardwoods would be converted to conifer plantations unless “the hardwoods would produce a higher net monetary return”. The EIS must address the impacts to wildlife from this activity and disclose the extent of the proposed actions. How will white oak stands and brushy habitats that are important habitat for big game and other species be managed? What are the “undesirable” conifer species and how will these stand conversions affect TE&S species?

***The EIS should consider the cumulative effects of Sudden Oak Death, Port Orford Cedar Root Rot and hardwood conversion activities on aquatic and terrestrial habitats, species and ecosystem processes.***

## **Aquatic Habitats**

***The DEIS fails to discuss the current condition of aquatic habitats and fish populations. Given the lack of baseline information it is impossible to assess the cumulative affect of past actions and the proposed alternatives.*** The disclosure of the affected environment for Endangered Species Act [ESA] listed fish species does not meet the minimum requirements of the National Environmental Policy Act [NEPA] and no discussion of populations or current habitat conditions is presented for special status species (Oregon Coast Coho salmon, Columbia River/Southwest Washington Coastal cutthroat trout, Jenny Creek sucker, Jenny Creek redband trout) or other recreationally and ecologically important species. The DEIS Page 335 states:

“Habitat for these special status fish species is affected by the same processes that affect the listed fish species. Therefore, the description of current conditions for listed fish species provides a sufficient description of conditions for the special status fish species.”

Habitat requirements, seasonal movement patterns, migration timing, and ranges are quite variable among these species. Significant differences exist between these species and ESA listed fish in the WOPR plan area.

Given the large body of information regarding the status of populations and habitats for these species, the BLM must disclose the current condition of habitat and populations to allow the reader and decision maker to compare the direct, indirect, and cumulative impacts caused by each alternative. Past land management activities have seriously degraded fresh water habitats throughout the WOPR planning area. The reader and decision maker are only able to assess the impact of proposed actions if the current condition of these habitats and populations are disclosed.

***The EIS should incorporate information regarding current conditions, ecosystem processes, and cumulative impacts of past, ongoing, and future actions on aquatic habitats documented in Watershed Analysis, LSR Assessments, monitoring documents, and other previously compiled information.***

***The DEIS fails to analyze the impacts of the proposed alternatives on ESA listed bull trout, Oregon chub, Lost River suckers, and shortnose suckers as well as special status fish species.*** The DEIS Page 338 states, “High intrinsic potential streams have not been determined for bull trout, Lost River suckers, or shortnose suckers.” Oregon chub and special status fish species should be included in this list. Because the analysis of effects relies on the calculation of intrinsic potential this statement indicates that no analysis was conducted for any of these species. A supplemental EIS should be produced prior to the completion of a final EIS to correct this and other significant failures to analyze and disclose the effects of the proposed activities as required by NEPA.

***The EIS must disclose the current condition of habitats and populations for both special status and ESA listed species to provide a base line to judge the impacts of the proposed alternatives.*** The DEIS fish analysis fails to comply with NEPA requirements

to disclose current conditions. In the Affected Environment section on fish (DEIS Page 339) states that:

“This analysis focuses on the key ecological processes that shape fish habitat over time rather than static conditions at one point in time.”

While we acknowledge the dynamic nature of aquatic habitats, the EIS must disclose the current condition of these habitats to allow an interpretation of the magnitude of projected effects and an assessment of cumulative impacts.

***How does the DEIS incorporate fish distribution and critical habitat for ESA listed species?*** The DEIS Page 338 states, “This analysis determines the effect of each alternative on fish habitat using current fish distribution data. The fish distribution is greater than the critical habitat distribution; therefore, the designated critical habitat is included for this analysis.” The meaning of this passage is unclear. Is fish distribution or critical habitat analyzed? The DEIS only discloses the results of the Wood/Intrinsic Potential/Fish Productivity model for the five “representative” watersheds. How do range and/or critical habitat play a roll in this analysis?

***The DEIS unreasonably discounts the BLMs role in the recovery of ESA listed fish species and the NEPA requirement to analyze and disclose the cumulative impacts of the agencies action on the environment.*** For example, the DEIS Page 338 states:

“The BLM can contribute to improving fish habitat, but the BLM within the planning area is rarely the predominant landowner in a fifth-field watershed. Therefore, limiting factors (habitat and nonhabitat) for listed species may continue regardless of the BLM’s contribution to improving habitat trends because of the other influences on the populations and their habitat.”

While it appears in the affected environment section of the DEIS, this passage provides no specific information regarding the current condition of ESA listed fish or their habitat in the analysis area. Its meaning should be clarified or the passage deleted. Are there any aspects of the Endangered Species Act that are modified or eliminated because a particular land manager owns a certain portion of a fifth-field watershed?

Discounting the BLMs role in listed fish conservation due to partial ownership of watersheds at a fifth-field scale fails to consider the cumulative impact of ***all*** actions on these species. Rather than discount the BLMs role in conserving and recovering listed fish the EIS must provide a review of the affected environment and all direct, indirect, and cumulative impacts on these species.

***Numerous sections of the affected environment fish section are unnecessary and provide no relevant information to the current condition of fish populations and habitat.*** The Code of Federal Regulations (40 C.F.R. 1502.15) states:

“Agencies shall avoid useless bulk in statements and shall concentrate effort and attention on important issues. Verbose descriptions of the

affected environment are themselves no measure of the adequacy of an environmental impact statement.”

Given the length of the DEIS the affected environment fish section should be focused on current conditions of fish habitat and fish populations allowing the reader and decision maker to compare the effects of the alternatives on fish.

Specific examples of extraneous passages include (but are not limited to):

- The last paragraph on DEIS Page 338 that continues onto DEIS Page 339 and figures 80 and 81.
- The final paragraph on DEIS Page 339.
- The section prior to the heading “Large Wood” at the top of DEIS Page 340.
- Much of the discussion of large wood on DEIS Pages 340-341 and figure 82 are not relevant to the affected environment section. This passage could be shortened to a few sentences about historical impacts of land management on large wood in streams.
- DEIS Pages 342-344 and figures 83-85 are not relevant to the affected environment section.
- Much of the remaining fish section in chapter 3 is also irrelevant to the disclosure of condition of the affected environment.

***Figures 80 and 81 on DEIS Page 339, while extraneous to the discussion of the affected environment, would be more informative if the y-axis units were in miles rather than the percent of the total.***

***The bullet list on DEIS Page 338 is followed by the statement, “The BLM can contribute to the survival of anadromous salmonids. For example, replacing culverts can increase fish distribution by improving mobility.” It is unclear if the statement is referring to individual or population level survival. The meaning and purpose of this statement is unclear. The affected environment section of a NEPA document should focus on the current conditions not on potential actions that may be undertaken.***

***The DEIS Page 336 states “Fish populations are cyclic by nature...” Does this mean all fish species in the analysis area? The EIS should provide a reference for this statement.*** While some species may be subject to cycles in population size, many species likely are not.

***The DEIS Page 336 states “Those fish species within the planning area that have been listed as threatened or endangered have been listed as a result of the following factors***

***(Good et al. 2005)...*** Good et al. (2005) provides a discussion of salmon and steelhead not all listed species in the WOPR area and specifically does not address factors for decline stating:

“However, in the status reviews, the BRTs did not attempt a rigorous analysis of this subject [factors for decline], and the same is true for this report.”

The EIS should refer to the original listing documents for each species to determine the cause for ESA listing.

***The DEIS Page 337 contains a paragraph that begins “A biological review team, consisting of scientists from...” The EIS should provide a reference to this document.***

***The DEIS Page 338 provides four bullet statements regarding survival traits of fish. This bullet list does not seem to be logically connected with the paragraphs either before or after it.*** Why does this list appear here? Reeves et al. (1995) were referring to survival at the population, evolutionary significant unit, and species levels. The title “Survival traits of fish” appears to refer to individuals.

***On DEIS Page 338 the statement “...streams are ranked by their intrinsic potential to provide habitat for chinook, coho salmon, and steelhead.” is misleading.*** The intrinsic potential is for ***juvenile rearing habitat*** for chinook, coho, and steelhead.

***The statement at the top of DEIS Page 339 omits or poorly represents the findings of Burnett et al. (2007).*** The statement fails to note that the Burnett et al. (2007) paper only studied these fish in the CLAMS project area. Within the CLAMS project area lands within 100m of high intrinsic potential streams “is about evenly distributed between private and public owners.” The vast majority of lands within 100 meters of high intrinsic potential coho streams were forested (Figure 4 in Burnett et al. 2007).

***The EIS should provide references to the science used select riparian management widths and management direction under each alternative. The EIS must specifically analyze and disclose the effects of the elimination of all aspects of the Aquatic Conservation Strategy.*** Given the poor health of riparian and aquatic habitats throughout the WOPR analysis area and the large number of ESA listed fish species, we find the significant reductions in riparian buffer widths and the elimination of the other aspects of the Northwest Forest Plan’s Aquatic Conservation Strategy unacceptable. The WOPR DEIS fails to consider important recent science including a review of the ecology and management of riparian and aquatic habitats in the Pacific Northwest (Everest and Reeves 2007) that states:

“We found no scientific evidence that either the default prescriptions or the options for watershed analysis in the Northwest Forest Plan and Tongass Land Management Plan provide more protection than necessary to meet stated riparian management goals.”

The drastic reductions of riparian widths and the elimination of the Aquatic Conservation Strategy proposed under the WOPR action alternatives are not based on scientific information and will result in significant impacts to aquatic organisms including ESA Listed species and important sport fishing populations. Everest and Reeves (2007) referring to curves illustrating the relationship between cumulative effectiveness of riparian buffers and distance from stream channel state:

“We are unaware at this time of any evidence in the scientific literature that supports modifying or retracting the original curves. The science produced since then (i.e., 1993) has supported the original assumptions and judgments used in developing the FEMAT curves (e.g., Brosfoks et al. 1997, Gomi et al. 2002, Reeves et al. 2003).”

Everest and Reeves (2007) specifically warn of the danger of the approach used to assess fish effects in the WOPR DEIS:

“However, management strategies developed from studies of individual functional aspects of riparian zones (e.g., *contribution of large wood to stream channels*) have often failed to meet riparian management goals (IMST 1999, Murphy 1995, USDA Forest Service 1995).” Emphasis added.

***The EIS should expand the analysis of the impacts to aquatic habitats and organisms to include all functions and processes important to riparian systems.*** The narrow focus of the WOPR DEIS analysis places valuable aquatic resources at risk. Everest and Reeves (2007) state:

“The multiple functions of riparian ecosystems operate in concert, with differing widths of unmanaged near stream vegetation needed to maintain different functions (table 2). Attempts to protect or maintain a single function, based even on well-designed scientific studies, may result in damage or loss of other functions.”

***The EIS must analyze and disclose the effects of the proposed activities and reconcile the analysis with available science and the requirements of the Endangered Species Act and Clean Water Act.*** In particular, the EIS must analyze and disclose the effects of the elimination of all five aspects of the Aquatic Conservation Strategy (Watershed Analysis, Riparian Reserves, Key Watersheds, Watershed Restoration, and Standards and Guidelines for Management Activities) under the action alternatives. Additionally, the EIS must analyze and disclose the indirect and cumulative impacts of the proposed actions on the US Forest Service’s programs and on other agency and private activities including the Oregon Plan for Salmon and Steelhead, Clean Water Act compliance plans, and other actions that depend on implementation of the Aquatic Conservation Strategy.



***We include a letter for the Environmental Protection Agency commenting on the Draft Spotted Owl Recovery Plan with our comments and incorporate by reference its comments on the Clean Water Act, the Northwest Forest Plan, aquatic habitats and other resources.*** See attached: Environmental Protection Agency. August 29, 2007. EPA Comments on the Draft Recovery Plan for the Northern Spotted Owl. (spotted owl epa letter.pdf)

***The EIS should consider the information regarding headwater streams in the publication:***

Olson et al. 2007. Biodiversity management approaches for stream–riparian areas: Perspectives for Pacific Northwest headwater forests, microclimates, and amphibians. Forest Ecology and Management 246:81–107.

## **Post-fire Logging**

***The DEIS fails to consider the effects of post-fire logging and other forms of “salvage” on aquatic habitats and species.*** The EIS should fully consider and disclose the effects of the proposed changes to land management on aquatic species and habitats. See the post-fire logging section in the terrestrial habitats section of these comments for a list of scientific references relevant to the analysis.

## **Riparian Management Areas**

***Post fire logging and other forms of “salvage” in RMAs is not appropriate and will harm aquatic resources.*** The EIS should consider the work of Reeves et al (2006) on post fire logging in riparian areas and other research on the subject and disclose the potential effects of the proposed changes to land management plans on riparian and aquatic resources.

***The EIS should fully analyze the cumulative, direct, and indirect impacts of activities in RMAs under all action alternatives including:***

- Yarding corridors and new roads permitted in RMAs (DEIS Page 5)
- Incidental harvest in non-harvest base lands for safety or operational reasons (DEIS Page 52)
- “Prescribed burns would be applied in riparian management areas to reduce the potential for uncharacteristic wildfires.” (DEIS Page 57)

***The DEIS states that “Channel Migration Zone” is used to define edge of streams. Channel Migration Zone does not appear in the glossary – how is it defined? How will it be identified operationally when implementing projects?*** Specific definitions should be given for areas or factors used to delineate RMAs

***Under alternative #1 (Table 25 DEIS Page 70) the definitions of the RMAs are unclear.*** For perennial streams the table states: “One site-potential tree height on each side of a stream extending from the edge of an active stream channel and including its channel migration zone.” The initiation point of the streamside end of the RMA is unclear in this statement. Both the Natural Lakes and Ponds and Natural Wetlands

definitions are unclear. Is the outer edge of the riparian vegetation the maximal extent of the RMA? How is the edge of a wetland defined and identified?

***Do RMAs include all flood plains?***

***What is the effect of the elimination of Riparian Reserves on unstable and potentially unstable lands?***

***The EIS should specify what is meant by operational or safety reasons to harvest in riparian management areas.***

***The use of the term “Nonharvest Zone” in the discussion of riparian management areas is confusing and misleading.*** These areas are open to timber harvest for safety or operational reasons and for silvicultural treatments.

***Under Management Objective for the “Riparian Management Area Land Use Allocation for the Nonforest Areas of the Medford District and the Klamath Falls Resource Area of the Lakeview District” DEIS Page 57 states, “Perennial and intermittent streams, wetlands, lakes, and natural ponds would be managed to maintain, improve, or restore floodplain connectivity.” What does this mean? How will it be accomplished?***

***How will the BLM define and map “intermittent streams”? It does not appear in the glossary. How will it be identified operationally when implementing projects?***

***The EIS should provide a description of what the BLM means by noncommercial vegetation and specify the minimum size and distribution of the 12 conifer trees per acre retained along intermittent non-fish-bearing streams under alternative #2 and other similar requirements under the various alternatives.***

***How will the BLM identify non-fish bearing intermittent streams?***

***The costs of identifying intermittent and non-fishbearing streams should be included in the EIS estimate of sale preparation costs?***

***The DEIS fails to analyze and disclose the effects of the proposed changes to the management of riparian areas surrounding lakes, ponds, reservoirs, wetlands, springs, and seeps under the action alternatives.***

***Several of the RMA delineations include “...the extent of seasonally saturated soil...” (e.g., Alternative #1 Natural Wetlands Table 25 Page 70). How will “Seasonally saturated soil” be identified?***

***The DEIS uses a definition of a site-potential tree that is inconsistent with assumptions of the wood model and is not supported by riparian science.*** The DEIS Page 70 defines a site-potential tree as: “The site-potential tree height for the purposes of determining the

riparian management areas would be based on district averages that are measured at a scale that is no finer than the fifth-field watershed.” How was this definition chosen and how does it differ from definitions used in the Northwest Forest Plan and the other Action Alternatives? The EIS should disclose the actual values to be used in RMA delineation. TMDL documents prepared under the Clean Water Act calculate site potential vegetation height (for example see McKenzie River TMDL). Why is this height not used?

***The EIS should explicitly state how debris-flow prone intermittent streams will be defined and identified under alternative #2.*** Table 31 DEIS Pages 79-80 Footnote #2 states:

“Intermittent streams that are below unstable headwalls (as identified by the timber production capability classification (TPCC) codes indicating significant instability (i.e., FGNW, FPNW, and FGR2)) that would periodically deliver large wood to fish-bearing streams. Intermittent streams that would not deliver large wood to fish-bearing streams because of geomorphic conditions (such as stream junction angle and low stream gradient) or roads would not be included.”

Specific details of what geomorphic conditions will result in streams being excluded must be disclosed. What is the relationship between the areas with this TPCC and the areas identified as potential source areas under the wood models used in the analysis? What portion of the analysis area is classified as unstable? How many miles of stream will be included in this category?

***The Northwest Forest Plan includes unstable and potentially unstable areas in riparian reserves while the WOPR action alternatives do not. How will this change impact land use and resources?***

***The proposed RMAs and management actions on lands adjacent to the Coquille Forest will result in significant effects to fish and aquatic habitats.*** The proposed activities fail to comply with both the Clean Water Act and the Endangered Species Act. The DEIS fails to analyze and disclose the effects of implementing this management scheme on fish populations. None of the five “representative” watersheds includes areas affected by this proposed management plan.

***The DEIS defines Riparian Management Areas for Non-Forested Areas of the Medford District and Klamath Falls RA under all action alternatives as “...water influence zone as indicated by hydrophilic vegetation.” (DEIS Page 57)*** The EIS should provide a more specific definition and provide an analysis of the effects of this change from the Northwest Forest Plan definition of Riparian Reserves. An indication of the area that will be affected by this definition and the locations where it will be used should be included in the EIS. The EIS must also describe what plants constitute “hydrophilic vegetation” and how the RMAs will be determined in areas where degraded riparian conditions have eliminated hydrophilic vegetation, water tables have been lowered

through erosional processes, or otherwise fail to meet the definition but remain important to the proper function and health of riparian systems. In particular, this change in definition likely will affect Lost River and short-nosed suckers. A specific discussion of this change and an analysis of its affect on these Endangered Species Act listed species must be included in the EIS.

***The DEIS page 57 states that conifer encroachment would be removed in RMAs in the Areas for Non-Forested Areas of the Medford District and Klamath Falls RA.*** While this may be an ecologically sound management activity, the BLM should address the root problems causing the encroachment including grazing and fire suppression.

***Wind throw of trees retained in riparian reserves will reduce shade and should be considered in the design and analysis of RMA widths.*** The EIS should consider the following publication in the design and analysis of RMA/Riparian Reserve Widths:

Reid LM, Hilton S. 1998. Buffering the Buffer. USDA Forest Service General Technical Report PSW-GTR-168, Berkeley, California.

## **Best Management Practices**

***DEIS Page LXII states: “Under all four alternatives, best management practices would be applied and are assumed to maintain or improve water quality.”*** The EIS should provide reference to any work supporting this assumption and discuss risks and potential impacts of making this assumption.

***The DEIS Page 57 states that Best Management practices found in Appendix I will be used to meet water quality standards.*** The EIS should document any monitoring or research to show the effectiveness of the Best Management Practices found in Appendix I in meeting water quality standards.

***The use of heavy equipment in riparian management areas is not appropriate and will result in damage to riparian habitats, water quality, fish, and other species associated with riparian zones or aquatic habitats.*** DEIS Page 1156 states: “Site-specific conditions, such as shade retention or soil erodibility, *may* require a ground-based equipment exclusion zone (50 to 75 feet) adjacent to waterbodies, floodplains, and wetlands to provide filtration and shade retention.” The wording of this passage using “may” indicates that heavy equipment may be allowed to operate on the banks of rivers and streams.

***How do BMPs change from current management plans? What will the effect of these changes be?***

## **Peak Flows**

***The analysis of peak flows relies on unpublished work by Dr. Gordon Grant.*** The analysis is critical to understanding the analysis of peak flows. It should be made available.

***The analysis of peak flows fails to consider global climate change.***

***The analysis of peak flows fails to consider road building and other activities related to timber harvest.***

***The analysis of peak flows relies on an out of date data set for non-BLM lands.***

Significant timber harvest has occurred on non-BLM lands since 1996.

## **Climate Change**

***The DEIS fails to consider the cumulative impacts of global climate change and BLM actions on resources impacted by the WOPR.*** The DEIS Page 491 states, “The analysis assumes no change in climate conditions, because the specific nature of regional climate change over the next decades remains speculative.” The DEIS fails to consider the extensive published scientific literature on climate change in the Pacific Northwest. The management of forests, fish, and water resources under changing climates has been the subject of intensive study in the Pacific Northwest. Recently, three researchers from the US Forest Service’s Pacific Northwest Research Station shared in the Nobel Peace Prize for their work on climate change. The scientific foundation and conclusions of published peer-reviewed climate change research is much less speculative than the modeling and analyses presented in the WOPR DEIS. The final EIS should include climate change in the modeling of future condition, tree growth, and environmental effects on resources including fire, fish, wildlife, invasive species, and water.

***For information on climate change in WOPR plan area, we recommend reviewing the information presented at:***

USDA Forest Service PNW Research Station’s Climate Change web page:

<http://www.fs.fed.us/pnw/research/climate-change/index.shtml>

Pacific Northwest Climate Impacts Group’s web page:

<http://www.cses.washington.edu/cig/about/about.shtml>

***The following references include some but not all of the publications on climate change in the Pacific Northwest that should be considered in the EIS:***

Battin J, Wiley MW, Ruckelshaus MH, Palmer RN, Korb E, Bartz KK, Imaki H. 2007. Projected impacts of climate change on salmon habitat restoration. Proceedings of the National Academy of Sciences 104:6720–6725.

Hamlet AF. 2006. Hydrologic implications of 20th century warming and climate variability in the western U.S. Ph.D. dissertation, University of Washington, Seattle.

Hamlet AF, Lettenmaier DP. 2007. Effects of 20th century warming and climate variability on flood risk in the western U.S.. Water Resources Research 43: W06427, doi:10.1029/2006WR005099.

Hamlet AF, Mote PW, Clark MP, Lettenmaier DP. 2007. 20th century trends in runoff, evapotranspiration, and soil moisture in the Western U.S. *Journal of Climate* 20:1468-1486.

Hamlet AF, Mote PW, Clark M, Lettenmaier DP. 2005. Effects of temperature and precipitation variability on snowpack trends in the western United States. *Journal of Climate* 18:4545-4561.

Harmon M, Ferrell W, Franklin J. 1990. Effects of Carbon Storage of Conversion of Old-Growth Forests to Young Forests. *Science* 247:669-702.

Harmon, ME et al. (2004). Production, respiration, and overall carbon balance in an old-growth *Pseudotsuga/Tsuga* forest ecosystem. *Ecosystems* 7:498-512.

Keeton WS, Mote PW, Franklin JF. 2007. Climate variability, climate change, and western wildfire with implications for the urban-wildland interface. pp. 225-253. In A.

Troy and R. Kennedy (eds)., *Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface*. *Advances in the Economics of Environmental Resources*, Vol. 6. Oxford, United Kingdom: Elsevier Sciences JAI Press.

Lenihan JM, Bachelet D, Drapek R, Neilson RP. 2006. The response of vegetation distribution, ecosystem productivity, and fire in California to future climate scenarios simulated by the MC1 dynamic vegetation dynamic California Climate Change Center, CEC-500-2005-191-SF: 1-19. Available online at:  
<http://www.treearch.fs.fed.us/pubs/27222>

Leung LR, Ghan SJ. 1999. Pacific Northwest Climate Sensitivity Simulated by a Regional Climate Model Driven by a GCM. Part I: Control Simulations. *Journal of Climate* 12: 2010–2030. Available online at:  
<http://ams.allenpress.com/perlserv/?request=get-document&doi=10.1175%2F1520-0442%281999%29012%3C2010%3APNCSSB%3E2.0.CO%3B2>

Leung LR, Wigmosta MS. 1999. Potential climate change impacts on mountain watersheds in the Pacific Northwest. *Journal of the American Water Resources Association* 35:1463–1471.

Littell JS. 2006. Climate impacts to forest ecosystem processes: Douglas-fir growth in northwestern U.S. mountain landscapes and area burned by wildfire in western U.S. ecoprovinces. Ph.D. dissertation, University of Washington, Seattle.

McKenzie D, Allen CD. 2007. Climate change and disturbance regimes in western North America. *EOS Transactions* 88:227.

Miles EL, Snover AK, Hamlet AF, Callahan B, Fluharty D. 2000. Pacific Northwest regional assessment: The impacts of climate variability and climate change on the water

resources of the Columbia River Basin. *Journal of the American Water Resources Association* 36:399–420.

Mote PW. 2003. Trends in temperature and precipitation in the Pacific Northwest during the twentieth century. *Northwest Science* 77: 271-282.

Mote PW, Parson EA, Hamlet AF, Keeton WS, Lettenmaier D, Mantua N, Miles EL, Peterson DW, Peterson DL, Slaughter R, Snover AK. 2003. Preparing for Climatic Change: The Water, Salmon, and Forests of the Pacific Northwest. *Climatic Change* 61:45-88.

Payne JT, Wood AW, Hamlet AF, Palmer RN, Lettenmaier DP. 2004. Mitigating the Effects of Climate Change on the Water Resources of the Columbia River Basin. *Climatic Change* 62: 233-256.

Stephenson N, Peterson DL, Fagre D, Allen CD, McKenzie D, Baron JS, O'Brian K. 2006. Response of western mountain ecosystems to climatic variability and change: the Western Mountain Initiative. *Park Science* 24:24-29.

Stewart IT, Cayan DR, Dettinger MD. 2004. Changes in Snowmelt Runoff Timing in Western North America under a 'Business as Usual' Climate Change Scenario. *Climatic Change* 62:217–232. Available online at: [http://meteora.ucsd.edu/cap/stewart\\_clch.pdf](http://meteora.ucsd.edu/cap/stewart_clch.pdf)

Turner, DP et al. 2007. Scaling net ecosystem production and net biome production over a heterogeneous region in the western United States. *Biogeosciences* 4:597–612.

***The DEIS fails to consider the effect of the proposed actions on carbon cycles and global climate change.*** The DEIS does not address this issue. Old, naturally formed forests in the Pacific Northwest store more carbon than any other forest (Harmon et al 2004, Turner et al. 2007) and logging these forests releases large amounts of carbon to the atmosphere that is not sequestered by subsequent stands managed on short to medium length rotations proposed in alternatives #1 and #2 (Harmon et al 1990). The work of Harmon et al (1990) should be used as the basis for an analysis of the effects of the proposed actions on atmospheric carbon levels.

**The economic analysis should consider the value of the carbon stored in old forests in the WOPR plan area.** The Chicago Climate Exchange (<http://www.chicagoclimatex.com>) provides a source of information on the value of carbon storage. Carbon credits are currently trading for \$2.00/metric ton and they have traded as high as \$5.00/metric ton of CO<sup>2</sup> in December. Given that Harmon et al (1990) estimate that logging old-growth in the Pacific Northwest releases 187 megagrams of carbon per hectare. The value of forgone carbon storage under the WOPR alternatives should be straightforward to calculate.

## **Recreation**

### **Wild and Scenic Rivers**

*The proposed actions will negatively affect potential and existing Wild and Scenic Rivers. Given the O&C Act's mandate to provide recreational opportunities, the need to conserve ESA listed fish, and the requirements of the Clean Water Act the EIS should fully examine and disclose the effects of the alternatives on each potential and existing Wild and Scenic River.*

### **State Scenic Rivers**

*The DIES fails to consider and disclose the effects of the action alternatives on State Scenic Rivers.* The DEIS Page 50 states that O&C lands within State Scenic River Corridors would not be managed "...to protect and enhance identified scenic, aesthetic, recreation, scientific, research, fish, and wildlife...". The EIS should disclose the area of O&C lands within state scenic river corridors and the effects of the proposed action on these rivers. The analysis should consider the economic value, recreational use and contribution to community stability of these corridors.

*The State of Oregon requires a permit for activities, including timber harvest, within ¼ mile of State Scenic Rivers. Will the BLM comply with this requirement?*

*The EIS should provide an internet link or other reference to the State Scenic River Management Plans and Agreements.* The DEIS Page 145 states that the Scenic sections of the Clackamas River, Nestucca River, and Sandy River have joint state and federal management plans in place and the Klamath River has a cooperative management agreement between the BLM and the Oregon Department of Parks and Recreation. We have been unable to locate these documents. The EIS should provide a reference to these documents and internet access to them.

### **Off-Highway Vehicles**

*The DEIS fails to consider a range of alternatives for the management of Off-Highway Vehicles.* The EIS must consider a range of options regarding the management of OHVs. Including a single plan under the actions common to all alternatives is not sufficient to comply with the requirements of NEPA.

*The public would be better served by creating an Off-Highway Vehicle planning process separate from the WOPR.* While OHV issues are ripe for discussion and the BLMs effort to better manage the impacts of OHVs are timely, we recommend that the BLM initiate an independent effort to plan for and manage the use of OHVs.

*Given the extent and magnitude of impacts from OHVs on BLM lands and BLMs inability to manage existing use no areas currently closed to OHVs should be opened to their use.* Examples areas opened to OHVs that should remain closed include the Haceta Dunes ACEC and Valley of the Giants ACEC.



***The DEIS fails to inform the public and decision maker regarding the proposed OHV designations.*** The DEIS Page 50 states, “Detailed maps are available to the public at each district office that show proposed off-highway vehicle designations with a preliminary road and trail network.” These maps should be made available via the internet or published in the EIS.

***The DEIS fails to consider and disclose the effects of the proposed changes to OHV management.*** Specifically, the EIS should disclose the current impacts of OHVs on resources and analyze the effects of the proposed changes to OHVs on soils, erosion, streams, invasive plants, Sudden Oak Death, Port Orford Cedar Root Rot, federal and state listed Threatened and Endangered species, fish, big game, special status species, non-motorized recreational users, and other resources that may be impacted.

***The DEIS states that travel management plans will be completed in the next five years.*** Does the BLM have staff available to complete this work? The cost of this work should be included in the BLMs budgets requirement estimates and economic analysis.

***The DEIS fails to consider the impact of OHV use on streams and other aquatic habitats and aquatic species including Endangered Species Act listed salmon and steelhead.*** The analysis of sediment transport to streams does not consider the proposed OHV designations.

***The DEIS fails to consider the impact of OHV use on terrestrial species and habitats including ESA listed and Bureau Special Status Species.***

## **Sudden Oak Death/Port Orford Cedar Root Rot**

***The DEIS fails to assess the risks posed by this introduced plant pathogen and provides a misleading interpretation of the existing science.*** The DEIS Page 492 states:

“Future spread of the disease into Oregon is uncertain. Models identify different levels of risk of sudden oak death spread across the planning area (Kelly et al. 2005).”

and concludes:

“However, because future spread of the disease and subsequent tree mortality in the planning area is speculative, there is no basis on which this analysis can assume future changes to forest composition, structure, and process as a result of Sudden Oak Death.”

Contrary to the conclusions of the DEIS, the General Technical Report cited (Kelly et al 2005), a habitat model for Sudden Oak Death created by the USDA Forest Service’s Pacific Southwest Research Station, found that all five models examined “...were consistent in their prediction of some SOD risk in coastal CA, OR and WA.”. Three of the five models predict high risk for almost all of the WOPR area and a

composite model placed most of the WOPR area in the highest two risk categories (Kelly et al 2005).

***The DEIS erroneously reports that only one site is infected with Sudden Oak Death in Southwestern Oregon.*** Although the DEIS reports only one infected site in Southwestern Oregon, at least 53 localities have been reported (Kliejunas 2007).

***The DEIS fails to use the best available science and does not cite an important comprehensive summary of the literature.*** The EIS must analyze the effects of the WOPR alternatives on the spread of Sudden Oak Death and incorporate the effects of Sudden Oak Death on resources. In particular, the cumulative effects of hardwood conversion projects and Sudden Oak Death on wildlife associated with oaks and other hardwoods affected by Sudden Oak Death should be disclosed.

***The DEIS should incorporate the latest science regarding Sudden Oak Death including the review by Kliejunas (2007).***

***The DEIS fails to discuss the impacts of the proposed activities on Port Orford Cedar Root Rot.*** The EIS must disclose the increase risk of infection and spread of this plant disease under the WOPR action alternatives.

***The EIS should consider and disclose the cumulative impacts of Sudden Oak Death, Port Orford Cedar Root Rot, off-highway vehicles, suction dredge mining, timber harvest and associated activities including road building on resources particularly aquatic resources including fish, water quality, and aquatic habitats.***

## **Areas of Critical Environmental Concern**

***The EIS should analyze and disclose the effects to timber production of designating ACECs.*** Given the small area of existing and proposed ACECs we believe this impact will be relatively small. This information could inform the public and decision maker allowing an assessment of the trade-offs between timber production and other resource benefits inherent in the decision to designate or eliminate ACECs.

***The presentation of the changes to ACECs and RNAs in the DEIS is difficult to follow and fails to adequately disclose the proposed action and the resulting effects.*** The DEIS provides little detail regarding the extent or impacts of eliminating or reducing the area of ACECs and RNAs. The EIS would provide greater clarity and transparency if each ACEC and RNA was discussed individually and a map including the extent of the ACEC or RNA and the distribution of O&C, public domain, and other lands was included. It is impossible to track the logic of why individual areas are included or excluded from designation and why individual areas are designated under some alternatives and not under other alternatives.

***Given that the courts have upheld the current Resource Management Plans that include the currently designated ACECs and RNAs the DEIS wrongly relies on the O&C Act to eliminate protection for these areas.***

***The DEIS fails to analyze and disclose the effects of eliminating ACECs and RNAs on rare organisms, special status species, ESA listed species, big game, fish, recreational opportunities and other resources.*** Tables 231, 232, 233, 234 do not show effects they only list the number of ACECs with each group of relevant and important values. The EIS should consider and disclose the effects of elimination, partial elimination, or failure to designate each ACEC on fish, wildlife, other species and resources.

***The DEIS provides no explanation of how ACECs were selected for designation, elimination, or exclusion of O&C Lands.*** The EIS must include a discussion of how decisions were made and what criteria were used to make the decisions. There is no apparent pattern in how the alternatives relate to the ACEC determinations.

***The DEIS combines proposed and existing special designation lands in the analysis making interpretation of the impacts to individual areas difficult.*** Existing and proposed ACECs and RNAs should be discussed and summarized separately.

***At a minimum, existing ACECs should be maintained and proposed ACECs should be designated on all non-harvest land base areas including on TPCC withdrawn lands and LSMAs.***

***The EIS should analyze and disclose the cumulative effects of removing ACEC status or failing to designate ACECs with significant blocks of old growth forest in watersheds or physiographic provinces where little unlogged native forest remains or where old growth is far below its historical distribution.*** In many cases (e.g. Valley of the Giants) these areas represent the only remaining native forest throughout watersheds and often over considerable areas. Cumulative impacts to old forest associated species, ecosystems, and processes should be considered across federal, state, and privately managed lands.

***The EIS should analyze and disclose the cumulative effects of removing ACEC status or failing to designate ACECs in areas with significant fish populations or habitats.*** Resident and anadromous fish are important components of Oregon's biodiversity and represent a significant recreational resource. Many of the proposed or existing ACECs (e.g. North Fork of the Wilson River ACEC) are known for their high quality fish habitat and important role in providing a foundation for the recovery of ESA listed and other depressed populations. Cumulative impacts to fish populations should be considered across federal, state, and private land.

***The EIS should designate the "Low Elevation Headwaters of the McKenzie River" ACEC.*** The McKenzie River is world renowned for flyfishing and the McKenzie River Drift Boat was specifically designed for fishing this river. The proposed ACEC flanks the river along one of the most popular floats for anglers and other recreational users. The BLM manages three popular boat launches in this area Silver Creek Landing, Rennie Landing, and Taylor Landing. The river corridor provides year-round recreational opportunities close to the Eugene-Springfield metropolitan area. The Eugene BLM

District's webpage lists the entire Highway 126 corridor between Walterville and Nimrod (includes the proposed ACEC) as a Wildlife Viewing Site and Silver Creek Landing as featuring "picnicking, wildlife viewing, fishing, watercraft launch". Salmon, steelhead, and trout fishing are popular on the McKenzie River. The area is inhabited by Endangered Species Act listed species including bull trout, Upper Willamette spring chinook, bald eagle and the northern spotted owl (DEIS Page 1338). Other species include the Bureau sensitive Harlequin duck. Native cutthroat Trout and rainbow trout, known as "McKenzie Redsides", provide a popular sport fish. Osprey can be viewed along the river. The Oregon Department of Fish and Wildlife's McKenzie River Stock Status Report (2002) emphasizes the importance of this basin for ESA listed Upper Willamette spring chinook:

"The McKenzie basin is the most important remaining area for natural production of spring chinook in the Willamette Basin. Although heavily influenced by hatchery fish, the wild population of spring chinook in the McKenzie River is the most productive in the Willamette gene conservation group."

The area is also important for ESA listed bull trout – the Oregon Department of Fish and Wildlife (<http://www.dfw.state.or.us/swwd/McKBullt.html>) referring to the Mainstem McKenzie below Trail Bridge Reservoir stated:

"This population of bull trout is the largest and appears to be the most secure in the Willamette Basin."

While native low elevation forests have largely be converted to tree farms the DEIS (Page 1338) identifies the value and rarity of these stands listing the relevant and important value category "Unique nature of a large continuous block of native forest. Minimally disturbed blocks of land under 2,000 feet on the east side of Willamette Valley." and that 11 miles of the river are "...suitable for inclusion in National Wild and Scenic System as a Recreational Segment."

The McKenzie River is listed as water quality limited under the Clean Water Act for excessive temperature. Excessive temperature negatively affects the beneficial uses "Salmonid fish spawning and rearing, anadromous fish passage, resident fish and aquatic life are the most sensitive beneficial uses in the McKenzie Subbasin." (Willamette Basin TMDL Document).

At a minimum, the EIS should disclose the effects of converting these lands from Adaptive Management Area to Timber Management Area and disclose the impacts to recreational and scenic values, Wild and Scenic River qualities, water quality, endangered and special status species, and angling opportunities. Economic effects of the proposed land management changes should also be considered and disclosed. Businesses and communities in the area rely on recreational visitors and the opening day of trout season is a major event in Leaburg and Vida with many community organizations hosting events. The analysis should consider the condition of the surrounding area and the

cumulative effects of past, ongoing, and likely future actions that have and will eliminate other native forests from the area.

***The proposed Taylor Creek ACEC should be designated for many of the reasons listed in the previous section regarding the Low Elevation Headwaters of the McKenzie River ACEC section.*** According to the DEIS this small (155 acre) area provides habitat for the Federally threatened bald eagle and northern spotted owl and that the “western parcel is a significant spawning channel of the McKenzie River.” The EIS must disclose the effects of not designating this area as an ACEC on Upper Willamette Spring Chinook, bull trout, and resident trout. The EIS must disclose the impacts to recreational and scenic values, Wild and Scenic River qualities, water quality, endangered and special status species, and angling opportunities.

***The proposed Wells Island ACEC should be designated.*** This tiny (73 acre) isolated block of BLM land, an island in the Willamette River between the communities of Albany and Independence, should be designated an ACEC. It has no commercial timber and the GIS coverage lup\_aa\_a\_acec\_allocations\_poly lists this area as eligible for Wild and Scenic River Status. Given the value of this island as wildlife habitat and the DEIS statement that “This island includes habitat that is unique from all BLM ownership in NW Oregon.” It is difficult to understand why the BLM would choose not to designate this area as an ACEC. If this area is not designated as an ACEC the EIS should disclose the rationale for the decision.

***The proposed Little North Fork of the Wilson River ACEC should be designated in its entirety.*** In the DEIS this ACEC would be designated under alternatives #1 and #3. It would be designated under alternative #2 but O&C Lands would be excluded. The majority of the area is administratively withdrawn under WOPR Alternative #2 and the limited area of TMA found on O&C lands appears to be non-commercial in the TPC data field of the lup\_aa\_a\_acec\_allocations\_poly GIS data layer. If the BLM decides not to designate this area as an ACEC the EIS should disclose the rationale for the decision. If O&C lands are excluded the EIS should disclose the area of the excluded lands and the proportion of the total that they represent.

The DEIS provides an accurate description of the area:

“Intact old-growth conifer riparian habitat is rare throughout the state of Oregon and is especially rare in coastal ecosystems. This potential ACEC contains old-growth components in a biologically diverse and natural condition not only within the riparian areas but throughout the adjacent slopes and tributary drainages as well. A relict old-growth plant community of Douglas-fir, Sitka spruce, Western hemlock, and Western redcedar that is approximately 450 years old within the canyon of the Little North Fork of the Wilson River. The riparian plant community is essentially natural, having large conifers shading and contributing downed material to the river system.”

“High quality habitat and known sites for northern spotted owl (FT), marbled murrelet (FT) and bald eagle (FT) exists within the potential Little North Fork Wilson River ACEC. All three species have nested either now or in the recent past within the area. Due to its inaccessibility, ruggedness, lack of fragmentation, and proximity to highly managed state and private forest lands, this area is one of the few remaining areas in the northern coast range where late-successional dependent species exist largely undisturbed.”

Besides containing this rare remaining fragment of old-growth forest surrounded by a sea of state and private clearcuts and providing habitat for three federally threatened bird species (northern spotted owl, marbled murrelet, and bald eagle), the importance of this area as a refuge for fish was recognized and the watershed was designated a tier 1 key watershed under the Northwest Forest Plan. Five species of salmon are found in the Little North Fork of the Wilson River and it is the only stream on BLM managed lands

***The EIS should designate the Steel Creek ACEC.***

***The EIS should maintain the Crabtree Complex RNA/ONA in its entirety.***

***The EIS should maintain the Jackson Bend ACEC***

***The EIS should designate the Molalla Meadows***

***The DEIS should maintain and protect the*** Sandy River Gorge ONA and all other BLM lands in the Sandy River Basin. Given the efforts of private conservation groups working with the BLM, the recent removal of Marmot Dam and other efforts to restore salmon and steelhead and the proximity to Oregon’s largest metropolitan area this area should be protected to comply with the O&C Act’s mandate to provide for recreation.

***Other important ACECs that should be designated or maintained include (but are not limited to):***

Elk Creek

Nestucca River

Valley of the Giants

North Fork Coquille River

Tioga Creek

North Santiam

North Umpqua River

## **Fire and Fuels Management**

***The EIS should explain how the management objective “Promote ecosystem function and resiliency (DEIS Page 33) can be accomplished given the proposed alternatives.***

Alternatives 1 and 2 reduce resiliency on Medford District and the Klamath Falls Resource Area. It is difficult to reconcile this management objective with is difficult to

reconcile with the Management Action “Immediate action to control and suppress all wildfires would be taken in all areas” (DEIS Page 33).

***The DEIS Page 33 states that a management objective is to “Reduce the fire hazards to communities that are at risk from uncharacteristic wildfires”*** The management objective should be to protect communities from all fires.

***The WOPR DEIS has used an overly broad definition of Wildland Urban Interface (WUI).*** The Wildland Urban Interface as depicted in Map 6 (DEIS Page 155) encompasses most of the Bureau of Land Management Lands in the project area. Other sources, such as the Oregon Department of Forestry, classify a much smaller part of the project area as WUI (see: <http://egov.oregon.gov/ODF/GIS/gisdata.shtml>). We can find no definition of WUI in the DEIS document other than general descriptions. WUI lands must be identified precisely to direct limited resources to areas where they are most needed and avoid applying treatments intended to safeguard homes to remote areas where they may have negative ecological impacts and provide little or no benefit to the protection of homes. The EIS should consider and disclose the direct, indirect, and cumulative impacts of activities allowed in WUI that would otherwise be prohibited or limited in the area.

## **O&C lands / Coos Bay Wagon Road Lands / Public Domain Lands**

***The O&C Act does not govern Public Domain lands. The DEIS and the proposed actions fail to distinguish between O&C Act Lands and public domain lands. The EIS should disclose the distribution of non-O&C Lands and consider the requirements of FLMPA for these lands.*** The DEIS proposes the same management actions on public domain lands and lands governed by the O&C Act. These actions include elimination of Northwest Forest Plan Standards and Guidelines, RMA widths and management direction, provisions for salvage logging, limited to no retention of green trees, snags, and down wood, and protection of intermittent streams and other important wildlife habitats. Roughly 400,000 acres of the WOPR area are public domain. These lands should be identified in the EIS and the BLM’s narrow interpretation of the O&C Act should not be applied to these non-O&C Act lands. The BLM should consider an alternative that provides a high level of conservation emphasis on Public Domain lands.

***The Coos Bay Wagon Road Lands are not governed by the 1937 O&C Act. The EIS fails to discuss the 1939 law governing the Coos Bay Wagon Road Lands.*** The EIS must discuss the 1939 law governing the Coos Bay Wagon Road and its tax-equivalence basis for calculating payments to the counties. The EIS must clearly show how county payments from O&C Lands, Coos Bay Wagon Road Lands, and Public Domain Lands are calculated. The EIS must also clearly state how the 1939 law directs the BLM to manage Coos Bay Wagon Road Lands.

***The Coos Bay Wagon Road Lands should be managed according to FLPMA.*** FLPMA does not provide an exemption for the Coos Bay Wagon Road lands. All management of these lands should conform to this law.

***O&C Act Lands on National Forests.*** Fairfax and Yale (1987) state that approximately 20% of the O&C lands are found on National Forests. The EIS should disclose where these lands are, which agency manages them, and how they are managed. Are these lands included in the WOPR planning area?

## **Management of Lands Surrounding the Coquille Forest**

***The DEIS fails to disclose the Coquille Tribe's Management Direction for Tribal Cooperative Management Areas document.*** During extensive internet searches on general search pages and searches of both the BLM's and Coquille Tribe's web pages we failed to locate this document. Because the EIS adopts this document for management of BLM lands, it must make this information available and consider the consequences of implementing it.

***The BLM must disclose the relationship between WOPR alternatives and management of the Coquille Tribal Lands.*** Is management on Coquille Tribal lands currently required to follow the Northwest Forest Plan? Will the WOPR change this? If so what are the effects of this change?

***The DEIS fails to analyze the direct effects of the proposed Coquille Management plan on BLM lands and the indirect effects of adopting this plan on resources on lands managed by the Coquille Tribe. In particular, the EIS should consider and disclose the direct, indirect, and cumulative effects of this action on ESA listed terrestrial and aquatic species, special status species, old-growth forests, and water quality limited streams.***

***The proposed management action on lands surrounding the Coquille Tribal forest violate the Clean Water Act by increasing water temperatures in water quality limited streams.***

## **Comments on other issues**

### **Grazing**

***The DEIS fails to consider and disclose the effects of livestock grazing and associated activities on ESA listed and other special status species including Lost River and shortnose suckers, bull trout, Oregon spotted frog, coho salmon, and Jenny Creek redband trout. The DEIS fails to consider and disclose the effects of livestock grazing and associated activities on water quality and aquatic habitats.***

### **Air Quality**

***The DEIS Page 30 mentions "Dust palliatives". What are these and what are their environmental effects?***



## **Fertilizer**

***The DEIS fails to disclose the extent and impact of fertilizer use.*** The DEIS Page 52 states that fertilizers will be used in forested stands. Are there limits placed on the use of fertilizers? Will they be used near aquatic habitats? How will the use of these fertilizers affect water quality and fish including listed fish species?

## **Ecology**

***The analysis should differentiate between “mature” and “structurally complex” forests.*** While the DEIS combines these two successional stages significant differences exist between them. The affected environment and environmental consequences should differentiate between these two stages and present analysis results for each stage rather than combined results.

***Forest age distribution graphs should present all age classes.*** In graphs of forest age distribution, the DEIS lumps stands > 200 years old. These graphs should display all age classes. Combining stands > 200 years old hides the loss of very old forests under the WOPR action alternatives.

## **Visual Resource Management**

***The DEIS fails to consider a range of alternatives for visual resource management.***

***The DEIS fails to consider and disclose the impacts of the changes to visual resource classes on the economy, community stability, and recreation.***

## **Cumulative Impacts**

***The DEIS fails to adequately describe the affected environment as it relates to lateral associated organisms and fish.***

“To address cumulative effects adequately, the description of the affected environment should contain four types of information: data on the status of important natural, cultural, social, or economic resources and system...” (CEQ Cumulative Impact Handbook Page 24)

The NEPA explicitly requires a cumulative impact analysis. A particular action may seem unimportant in isolation, but that small action may have dire consequences when combined with other actions - See document in WOPR file titled Mt Ashland Decision Notes.

***The EIS should consider and disclose the cumulative impacts of:***

The West wide energy corridors project  
Cumulative impact of energy corridors  
Suction dredging mining

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